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ABSTRACT

The impact of the School Improvement Through Instructional Process (SITIP) program in Maryland schools was evaluated. The program encourages application of research on planned change to implement one or more of four instructional models: (1) Active Teaching--emphasis on direct instruction, review and discussion of homework, individually supervised seatwork, weekly review, and maintenance; (2) Mastery Learning--objectives broken down into prerequisite and component skills, instruction aligned with objectives to be mastered, "no-fault" testing, corrective work, and testing of final mastery of objectives; (3) Student Team Learning--peer tutoring and team competition for facilitating student learning; and (4) Teaching Variables--two variables strongly related to student achievement, "content" and "time," are emphasized, with ongoing observation supporting and evaluating classroom instruction, assessment of prior learning, alignment of curriculum objectives to testing instruments, and evaluation of the effectiveness of student engaged time. This publication contains six sections. Section I is the introduction; section II contains an overview of Maryland's school improvement program. In section III, an evaluation overview is presented. Section IV discusses state initiatives and assistance. Section V outlines local implementation and program impact. Section VI contains the summary and conclusions. Included are 64 tables and 10 charts and figures. (JD)

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INSTRUCTIONAL IMPROVEMENT IN MARYLAND:
IMPACT ON EDUCATORS AND STUDENTS

by

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January, 1984

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I. INTRODUCTION

National attention is focused on education, the quality of instruction offered by teachers, the effectiveness of the leadership of administrative and supervisory staff, and the value of structures and programs advocated by schools, local education agencies (LEAs), and state education agencies (SEAs). Concerned professionals assess current efforts, and plan and implement improvements in a variety of ways.

In Maryland, a statewide program with voluntary local participation was initiated in 1980. This School Improvement Through Instructional Process (SITIP) program encourages application of research on planned change to implement one or more of four instructional models. The Maryland State Department of Education (MSDE) supports local implementation by providing funds, training, and technical assistance. The SITIP design also includes evaluation, with a series of interim reports providing feedback on critical events so that improvements can be made when appropriate.

Three major evaluation reports will have been written by the time direct involvement by MSDE comes to an end. The first (Roberts et al., 1982) focused on implementation for the period December 1980 to June 1982. The last, which will cover the 1983-84 school year, will focus on institutionalization. This report, covering the 1982-83 school year, focuses on program impact.

Following a brief overview of SITIP, the following areas are discussed: evaluation, state initiatives and technical assistance, and local implementation and impact. The final chapter presents a summary and conclusions.

II. OVERVIEW OF MARYLAND'S SCHOOL IMPROVEMENT PROGRAM

This chapter presents an overview of Maryland's school improvement program, outlines the four instructional models used in the program, and summarizes the results reported for the first 18 months--December 1980 to June 1982 (Roberts, et al., 1982).

The SITIP Design

Maryland's School Improvement Through Instructional Process (SITIP) program involves education agencies (LEAs) in voluntarily implementing instructional processes proven to be effective in increasing student achievement. The instructional models used in SITIP are: Active Teaching, Mastery Learning, Student Team Learning, and Teaching Variables. All four models are research-based and were selected by the Maryland State Department of Education (MSDE) as potentially useful to all schools for improving instruction in all structured academic curricula. During the 1981-82 school year, nearly 700 teachers in grades K-12 used one or more of the models in mathematics, reading/language arts, science, social studies, or other academic areas.

Preparation activities by MSDE began in mid 1980. The intention was to develop a program to help LEAs bring about instructional improvement, preferably by using "proven practices," or research-based models of instruction, together with processes found to be effective in planned change and school improvement. The ultimate objective was to increase student achievement.

SITIP was designed by MSDE as a multi-year program consisting of interactive activities which are outlined below and presented in Figure 1.

1. Preparation (open systems planning): Identify needs and potential solutions. Identify operating constraints and opportunities, particularly existing programs or policies that could form a basis

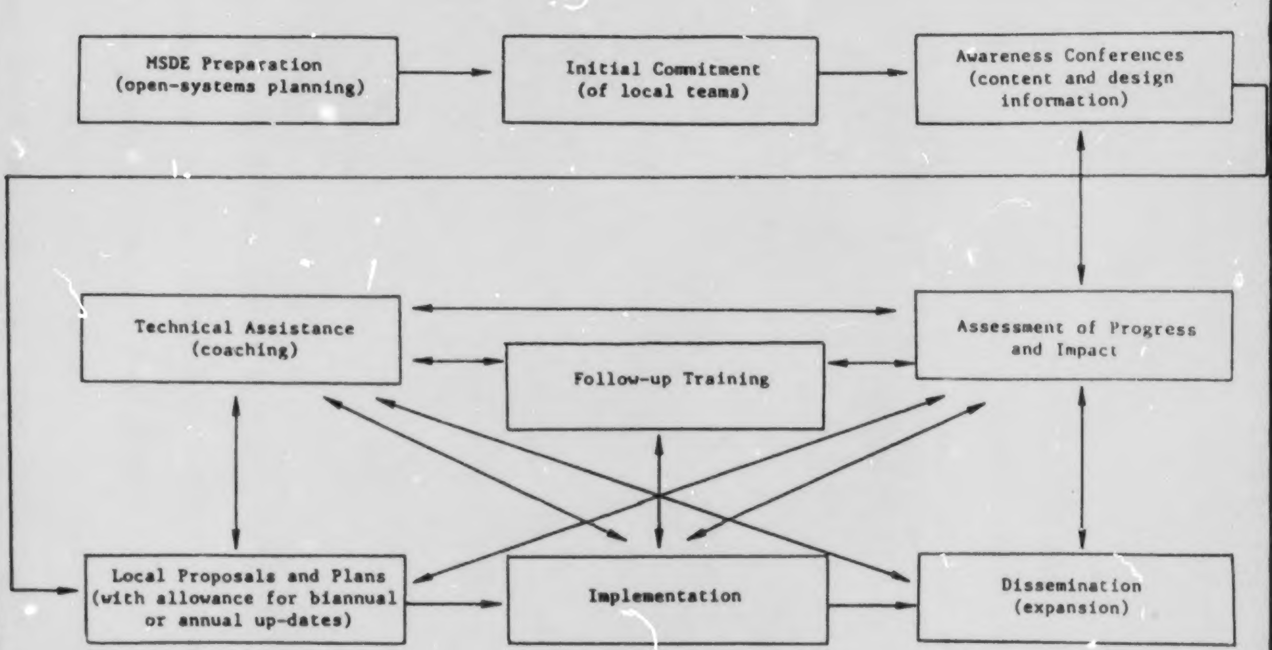
MSDE Preparation (open-systems planning)
Initial Commitment (of local teams)
Awareness Conferences (content and design information)
Technical Assistance (coaching)
Follow-up Training
Assessment of Progress and Impact
Local Proposals and Plans (with allowance for biannual or annual up-dates)
Implementation
Dissemination (expansion)

Figure 1. The SITIP Design: An Interactive Model for Program Improvement

for action. Draft a design to apply solutions to needs within operating constraints, but with flexibility for improvement, if necessary. Take care of logistics.

2. Initial Commitment: Review plan with LEA superintendents. Get commitment for local team attendance at awareness conferences. Distribute advance reading materials to participants.

3. Awareness Conferences (content and design information): Have each of the instructional improvement models presented by its developer at awareness conferences attended by LEA teams, MSDE staff, and interested others. Describe design and nature of (voluntary team) involvement.

4. Local Proposals/Plans: Help cross-hierarchical local teams draft proposals to implement one or more of the models. Negotiate revisions as needed at the beginning of each school year to enhance useful implementation. Encourage realistic timelines and scope, for implementation as planned.

5. Implementation (incremental application): Help LEAs implement selected models using their own strategies but involving representatives of all role groups. Encourage innovation fidelity but allow adjustment of scope, if necessary.

6. Dissemination (expansion): Encourage use of the models in many schools, and share information about successes between LEAs.

7. Technical Assistance (coaching): Assign MSDE staff (across divisions) to assist LEAs in planning, implementation, and dissemination; to conduct follow-ups; and to facilitate networking. Build capacity; do not create dependency.

8. Follow-up Training: Conduct an intensive three-day training session on each model for prospective implementers (teachers, school administrators, central office staff). Conduct annual or bi-annual follow-up training sessions (using participatory planning) to maintain quality implementation. Assist LEAs (central office staff) in planning/conducting turnkey training.

9. Assessment of Progress and Impact (cyclic): Have a "third party evaluator" collect and analyze data systematically and use (feedback) information to make improvements and publicize successes. (Data on local needs and concerns are of particular importance in planning/implementing every activity.)

The activities outlined above began in 1980. All 24 LEAs were represented at orientation conferences. Nineteen LEAs submitted proposals for implementation through June 1983. For the 1982-84 school years, five "new" LEAs decided to participate. State department support (funding, provision of training and technical assistance to LEAs) will continue through the 1983-84 school year. At that time it is hoped that LEAs will terminate or institutionalize their model programs with each district taking responsibility for local needs, decisions, and actions. A chronology of key activities is presented in Table 1: the cycle of planning, training, implementation, and evaluation clearly follows the design.

The Instructional Models

Four research-based instructional models (innovations) were selected by MSDE as potentially useful to all schools for improving instruction in all structured academic curricula. They are: Active Teaching, Mastery Learning, Student Team Learning, and Teaching Variables.

- Active Teaching (AT) is a system of direct instruction developed by Thomas Good and Douglas Grouws at the University of Missouri. Originally designed for the teaching of mathematics, AT consists of the following components: 1) pre-lesson development -- concepts and skills from the previous night's homework are reviewed, homework is checked and collected, and students engage in mental exercises; 2) lesson development -- prerequisite skills and concepts are briefly reviewed, new concepts are introduced via teacher explanation and demonstration, and student comprehension is assessed through controlled practice; 3) seatwork -- uninterrupted, individual, successful practice is provided in order to increase proficiency in the skills and concepts taught; 4) homework -- homework is assigned related to the concepts developed that day; and 5) review/maintenance -- weekly and end-of-unit reviews help to maintain skills and concepts taught.

- Mastery Learning (ML), developed by Benjamin Bloom and James Block, combines curriculum alignment and diagnostic/prescriptive instruction with a philosophy that all students can succeed. Essential components are: 1) developing a scope and sequence of objectives, broken down into prerequisite and component skills; 2) providing appropriate instruction aligned with the objectives to be mastered; 3) testing the student's progress in mastering the objectives through the use of a formative evaluation measure ("no fault" test); 4) providing students who have not achieved mastery with additional corrective work in the deficient areas specified by the formative tests, and providing students who have achieved mastery with enrichment activities to reinforce and supplement learning; 5) testing final mastery of the objectives with a summative evaluation

Table 1

Chronology of Key SITIP Activities

	1980			1981				1982				1983				1984			
	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec
1. MSDE preparation begun	x																		
2. Commitment given by LEA superintendents & developers re. awareness conferences		x																	
3. Awareness conferences held			I---	-I															
4. Local proposals submitted to MSDE				I--I															
5. MSDE/LEA/developer planning summer institutes				I---I															
6. MSDE technical assistance provided				I---	---	---	---	---	---	---	---	---	---	---	---	---	---I		
7. Four summer institutes held					x														
8. MSDE/LEA planning modified						x													
9. Implementation (by 19 LEAs)					I---	---	---	---	---	---	---	---	---	---	---	---	---I		
10. Follow-up training conducted							x	xxxxx											
11. Instructional leadership conferences conducted									x			x					x		
12. Evaluation report distributed (implementation)										x									
13. Planning and orientation for "new" LEAs										I---I									
14. Implementation (by 5 "new" LEAs)										I---	---	---	---	---	---	---	---I		
15. Follow-up training conducted										x x x		x	x						
16. Combined summer institute held													x						
17. Local plans finalized														x					
18. Evaluation report distributed (impact)															x				
19. Follow-up training conducted															xx	xx			
20. MSDE/LEA planning reviewed																	I--I		
21. Local "ownership" for institutionalization or termination																	I---	---	---I
22. Evaluation report distributed (institutionalization)																			x

measure; and 6) recording student progress in terms of individual mastery of specific objectives. "Mastery" is usually defined as 80% of the students demonstrating success on at least 80% of the objectives in a given unit of instruction.

- Student Team Learning (STL) techniques use peer tutoring and team competition to facilitate student learning. Student Team-Achievement Divisions (STAD) and Teams-Games-Tournaments (TGT) were developed by Robert Slavin and staff at the Johns Hopkins University. Jigsaw was started at the University of California at Santa Cruz. The key factors of STL are peer interaction, cooperation, and competition. STAD is basically team learning; TGT is team learning plus competition by ability level; Jigsaw is team learning of specific elements of a program, with regrouping for peer teaching across elements.

- Teaching Variables (TV) was developed by David Helms and staff at Research for Better Schools (RBS). Two variables found to be strongly related to effectiveness of instruction and student achievement were identified: "content" and "time." The "content" variable encompasses two factors: 1) assessment of prior learning, and 2) alignment of curriculum objectives and classroom instruction to the testing instrument. The "time" variable improvement cycle involves: 1) measuring student engaged time (SET) via classroom observation, 2) comparing SET and opportunity for improvement, 3) reviewing and selecting research-based improvement strategies, 4) implementing strategies, and 5) using additional classroom observations to evaluate the effectiveness of the strategies in improving SET.

The innovations vary in complexity. Complexity was determined on four criteria:

- knowledge -- how much that is new must be learned?
- materials -- how much do classroom materials need to be redesigned or developed?
- methods -- how much change is required in the way things are done in the classroom and in the school?
- organization -- how much role change and administrative action are required?

Each innovation was rated on a scale from 1 to 5 (with 5 indicating high complexity) on each criterion, and a mean rating was assigned. (See Table 2.) As designed, the innovations in order of complexity are: Active Teaching (1.62), Student Team Learning (2.37), Mastery Learning (3.12), and Teaching Variables (3.75).

As implemented, Teaching Variables was less complex than Mastery Learning since 60% of TV implementers used only the "time" variable. AT and STL, as implemented, were simple and classroom-based, requiring less support from school administrators and central office staff than ML or TV. ML and TV were both complex and school-based, requiring cross-hierarchical coordination.

Table 2

Complexity of the SITIP Innovations

Topic / Dimension	AT	ML	STL	TV
knowledge	2	3	3	5
materials	2	4	4	3
methods - in class	2 } 1.5	4 } 3.5	4 } 2.5	3 } 3
- in school	1	3	1	3
organization	1	2	1	4
total	6.5	12.5	9.5	15
mean	1.62	3.12	2.37	3.75

Mean ratings vary from a high of 5.00 to a low of 1.00.
AT = Active Teaching, ML = Mastery Learning,
STL = Student Team Learning, TV = Teaching Variables

Summary of Findings: December 1980 to June 1982

The nature of the innovation is one of many factors influencing implementation. Other influential factors include strategies,* nature and extent of training and assistance, local commitment and nature of involvement, etc. During the first 18 months of SITIP a study was conducted to examine such factors and their relationship to successful implementation of the models. Two areas were addressed:

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* Strategies of implementation were designed by LEAs and included: a lighthouse school approach, capacity building through staff development, pilot school to district design, and district wide.

- the activities of MSDE, including training events and the delivery of technical assistance (TA)
- the activities of local educators, including participation in and reaction to state initiatives, as well as implementation of instructional models.

It was expected that no single role group (e.g., teachers) could or should accept full responsibility for implementing a model. The study therefore attempted to identify the tasks needing to be done and how the work was shared among the role groups (i.e., teachers, school-based administrators, central office staff, and MSDE staff). Findings discussed in that report (Roberts, et al., 1982), distributed to LEAs in October 1982, are summarized here. In comparing innovations, the following should be kept in mind:

- Active Teaching: Strategies required active involvement from all role groups. The innovation as implemented was simple and classroom-based. Scope was larger than for any other topic (33 schools, 472 teachers).
- Mastery Learning: Strategies were school-based. The innovation as implemented was complex and suggested a need for cross-hierarchical coordination. Scope was moderate (81 teachers in six schools).
- Student Team Learning: Strategies were primarily teacher-oriented or classroom-based with initial involvement or light monitoring by school administrators and central office staff. The innovation as implemented was fairly simple and classroom-based. Scope was moderate (100+ teachers in 20+ schools).
- Teaching Variables: Strategies were primarily school-based with active involvement by central office staff in three of the five LEAs. The innovation as implemented was moderately complex suggesting a need for interaction between observers and teachers observed. Scope was low (50+ teachers in six schools).

Regardless of the model adopted, it was found that certain roles and responsibilities were effective in facilitating instructional improvement:

- SEA staff initiate, encourage voluntary participation, build and maintain commitment, and provide (research-based) assistance as resource coordinators.

- Central office staff engage in cross-hierarchical communication, linking schools and LEA to SEA, and act as resource coordinators by providing various support services. If implementation is in more than one school, CO staff function as "project directors."

- School-based administrators ensure that teachers' concerns are addressed (logistical and affective), and function as supportive facilitators or managers, sometimes with "project director" status if a "lighthouse school" strategy is used.

- Teachers carry out classroom implementation tasks. Also, teacher representatives support others by "turnkey training," especially for capacity building sites, and, when implementation is single-school focused, teachers can function as "project directors" if administrators (school or central office) do not take on that responsibility.

Other findings of this study, relevant to role group responsibilities suggest the following conclusions:

- Initial staff interest or commitment to implement a new program or practice can be built if: (1) the superintendent permits staff to look at new ideas with the intent to implement if appropriate, (2) the innovation and its presenter/developer have validity and credibility, and (3) staff believe that they do have choices and can influence decisions.

- Staff interest is the most important factor in selection of the innovation and in determination of elements of the implementation plan.

- Cross-hierarchical planning facilitates mutual understanding which helps to prevent problems during implementation (such as communication breakdowns, resentment, feelings of isolation).

- Representation of the various role groups in planning and subsequent decision-making builds understanding and commitment, ensures inclusion of role group perspectives, and strengthens organizational knowledge so that if reassignments are made knowledge is not lost and new staff will not be given a one-sided briefing.

- The complexity of the innovation determines the amount of work to be done for a given school site.

- The implementation strategy determines how the work is shared among role groups and how the burdens shift among role groups over time.

- The implementation strategy plus the scope (number of schools, teachers, curricular subjects, grade levels, amount of time for the innovation to be used for each class or subject) determine how much work is to be done within a given LEA.

- The nature and extent of communication and decision-making determine productivity and affect.

- The organizational norms of the LEA determine communication and decision-making procedures.

- Changes in organizational norms are influenced by two forces acting almost simultaneously, but not necessarily collaboratively: external "pressures," (e.g., TA recommendations); and internal "pressures," (e.g., topic advocate recommendations or teachers' concerns).

- Regardless of the nature of the innovation, all role groups must carry out the following tasks, in order of investment: (1) interactive support (acknowledgement, shared knowledge, problem-solving, resource allocation); (2) learning/training (before and during implementation); (3) record-keeping; (4) materials identification or development; (5) evaluation; and (6) administration.

- Perceptions of interactive support reflect participants' assessment of each others' commitment. Judgements are based not only on how much useful help was provided, but also on the visibility of the support (with lower ratings for low visibility).

- It is preferable for each role group to perceive high support from close role groups rather than distant ones. Therefore, visibility should be reduced with distance. [For instance, teachers should perceive principals as supportive. If there is a problem a state technical assistant may help central office staff (who turnkey ideas to the principal) or the TA (with central office permission) may help the principal. But the state TA does not provide support to the teachers when it should more appropriately come from the principal.]

- Representatives of all role groups need a thorough understanding of innovations to be adopted so that: (1) plans are realistic, (2) reassignments do not result in the organization's loss of knowledge, (3) interactive support can occur, (4) no one group is overburdened, and (5) there is a reasonable chance for institutionalization and dissemination beyond initial pilot sites.

- Impact in terms of student achievement was evident to some extent, although not formally expected for the first year of implementation. Results suggest (tentatively) that greatest impact was made by Mastery Learning, followed by Active Teaching. Student Team Learning appeared to influence student affect more than achievement. Teaching Variables data are inconclusive.

- People providing technical assistance (TA) are most effective when they are: (1) responsive to the needs of the group (of implementers), (2) task oriented and knowledgeable about local norms, the innovation, and processes of planned change, and (3) skillful in facilitating shared decision-making and in coordinating communication.

- Designs or plans for instructional improvement are most likely to be successful if: (1) participation (of organizations) is voluntary, (2) communication is multi-dimensional, (3) planning is interactive with training, (4) training and technical assistance are provided during implementation, (5) "lip service compliance" is not accepted as implementation, (6) adjustments of scope are considered legitimate and relate to resources available, and (7) each participant has some degree of choice about his or her involvement (nature or extent) in the effort. These elements were present in SITIP.

III. EVALUATION OVERVIEW

During the 1980-1981 and 1981-1982 school years, overall evaluation of SITIP was conducted for MSDE by Research for Better Schools (RBS). The evaluation was designed to address two "levels:" (1) specific events or stages of activity, and (2) the overall SITIP program as a viable strategy for statewide school improvement. Also, MSDE required the findings to be reported on an on-going basis so that data-based decisions could be made to bring about program improvements.* During the 1982-1983 school year, RBS continued to take primary responsibility for evaluation, but LEAs assumed additional responsibilities, and "impact" data received greater attention.

This chapter summarizes the questions addressed by the study for the 1982-83 school year, responsibilities and data sources, measures and methods, and data analysis and reporting procedures.

Questions Addressed

The study addressed four areas: impact, implementation, dissemination, and technical assistance.

1. What is the nature and extent of impact:

    1.1 On educators, in terms of:
        1.1.1 increased knowledge
        1.1.2 change in practice or policy
        1.1.3 attitude to specific topics and to teaching/learning in general

    1.2 On students, in terms of:
        1.2.1 change in achievement levels
        1.2.2 change in behavior (e.g., attendance, disruption, homework completion)
        1.2.3 change in attitude (e.g., locus of control, self-concept, group participation, willingness to work)

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* In addition to short interim reports of critical events submitted to MSDE staff, and topic reports reviewed with LEAs, a major report was developed covering the period December 1980 to June 1982: Roberts, et al., Instructional improvement in Maryland: A study of research in practice, 1982. ERIC #: Full report, ED222486; executive summary, ED223553.

2. What is the nature and extent of implementation:

    2.1 Within a local system
    2.2 Across LEAs implementing a given model

3. What is the nature and extent of dissemination:

    3.1 Within a local system
    3.2 Between LEAs
    3.3 Outside Maryland

4. What is the nature and extent of technical assistance provided by MSDE in terms of:

    4.1 Implementation -- planning, training, support
    4.2 Dissemination -- planning, training, knowledge base/information
    4.3 Evaluation -- planning/design, techniques, measures, data analysis and reporting

Responsibilities and Data Sources

While RBS had primary responsibility for the SITIP evaluation, three factors influenced the decision to involve MSDE TAs and LEA coordinators more directly in evaluation activities: (1) student achievement data relating to impact questions could best be collected and summarized by LEAs, (2) if similar measures and methods were used by all LEAs, results could more easily be compared across the state, and (3) some LEA and MSDE staff wanted to improve their expertise in evaluation by becoming more involved.

For these reasons, RBS worked with MSDE TAs to develop an overall design and written guidelines for LEA involvement. The guidelines summarized the design (see Table 3), listed role group and individual responsibilities, included a checklist planning sheet indicating mandates (e.g., choice of various given ways to measure student achievement), and described measures and methods. RBS and MSDE staff reviewed the guidelines with LEA teams and each LEA completed a planning sheet agreeing to a coordinated evaluation effort.

Table 3

Summary of SITIP Evaluation Design (1982-83)

Evaluation Question	Methods and Measures	Data Source	Data Collection Schedule	Administered By	Analyzed By
Impact On: Educators	• Process observations	• 8 Critical events (e.g., follow-up meeting or pilot site events)	• Selected by TAs, 2 per topic	RBS observer	RBS
	• Interviews (on-site or phone)	• Key contact person/ LEA (24)	• April '83	RBS interviewer	RBS
	• Survey	• LEAs {CO SA T} Up to 25/ LEA (600)	• May '83	LEA	RBS
Students	• CAT in Math and Reading/Language Arts	• SITIP & Control Ss grades 3, 5, 8	• Oct. '82 Oct. '83	SEA	LEA
	• Other national norm-referenced tests	• SITIP & Control Ss	• Pretest - Sept. '82 • Posttest - May '83	LEA	LEA
	• Locally developed criterion referenced test	• SITIP Ss	• Pretest - Sept. '82 • Posttest - May '83	LEA	LEA
	• Locally developed teacher made criterion referenced tests by unit	• SITIP Ss	• Ongoing	Ts	Ts/LEA
	• "My Class Inventory" - student attitude survey	• SITIP Ss	• Pretest - Sept. '82 • Posttest - May '83	LEA	LEA
	• S questionnaire	• SITIP Ss (Sample)	• Nov. '82 May '83	LEA	LEA
	• Survey	• LEAs {CO SA T} Up to 25/ LEA (600)	• May '83	LEA	RBS
Implementation	• Survey	• LEAs {CO SA T} Up to 25/ LEA (600)	• May '83	LEA	RBS
	• Questionnaire	• LEA key contact	• Pre-Sept. '82 Post-May '83	LEA	RBS
	• Process observations	• TA meetings	• Monthly	RBS	RBS
		• Critical events	• Selected by TAs, 2 per topic	RBS	RBS
Dissemination	• TA logs	• MSDE TAs	• Monthly	TAs	RBS
	• Survey	• LEAs {CO SA T} Up to 25/ LEA (600)	• May '83	LEA	RBS
Technical Assistance	• TA logs	• MSDE TAs	• Monthly: Aug. '82 Aug. '83	TAs	RBS
	• Process observations	• TA meetings	• Monthly: Aug. '82 Aug. '83	RBS	RBS
	• Interviews	• MSDE TAs • LEA key contacts	• March-April '83	RBS	RBS
	• Feedback forms	• LEA follow-up participants	• Selected by TAs	TAs	RBS

In general, RBS was responsible for design, development, analysis, and reporting. MSDE TAs were responsible for coordination, distribution and collection of materials (e.g., questionnaires), and assistance to LEAs in following the guidelines (e.g., how to score and summarize student attitude surveys). LEA coordinators (key contacts) carried out tasks similar to those of TAs, but each in his/her own district. LEA evaluators worked with coordinators to collect, score, and summarize data, particularly that collected from students. (Local responsibility for these tasks not only increased local involvement and awareness of program impact, but also ensured that concerns relating to "protection of human subjects" were dealt with appropriately.)

Information--materials, interviews, survey responses--was provided by: (1) the seven MSDE TAs and the SEA assistant deputy superintendent; (2) LEA central office staff directly involved in SITIP (usually between one and three people for each of 24 LEAs); (3) school-based administrators (up to 10 per LEA); and (4) teachers (up to 20 per LEA). Also large numbers of participants of state-sponsored training events provided information either directly (responding to questionnaires) or indirectly (observed by RBS).

Students also completed cognitive and affective measures.* Usable data from cognitive measures (e.g., California Achievement Test) were summarized by 9 LEAs and submitted to RBS. Usable data from affective measures (e.g., Learning Environment Inventory) were summarized by 14 LEAs and submitted to RBS. Two of the 14 LEAs used their own questionnaires to measure student attitudes.

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* While MSDE expected all "veteran" LEAs (19) to submit data summaries, several did not do so, for a variety of reasons.

Measures and Methods of Data Collection

Six general methods of data collection were used: observations, interviews, questionnaires, document analyses, and measures of student attitudes and achievement.

Observations

The evaluation design included observations by RBS staff of eight critical events (two per topic) selected by the MSDE TAs. These critical events could consist of training activities conducted by the TAs or site visits to participating school districts.

Four MSDE training events were observed by RBS staff. These events consisted of one follow-up each for AT, ML, and STL, and one combined follow-up for AT, STL, and TV. In addition, RBS staff conducted process observations in four LEAs, and at two state-wide conferences--one in May 1983 at which all 24 LEAs made presentations, and one in July 1983 at which new LEA staff were trained and all LEAs updated their plans. (RBS staff were assisted in observing the May conference by MSDE-supported staff involved in another project.)

Monthly technical assistance meetings were observed to determine the nature and extent of assistance and the operating opportunities and constraints.

In all cases comprehensive notes were taken, objectively describing what occurred and indicating time elapsed (about 400 pages of field notes). Reports on the training events were submitted to the TAs as soon as possible (in most cases within ten days) after the event. Notes of the training events and TA meetings served as data bases for the annual evaluation report.

Interviews

Telephone interviews were conducted by RBS with LEA key contacts during the summer of 1983 in order to verify and clarify, if necessary, information provided by the LEA.

The MSDE TAs were interviewed individually on questions relating to their role in SITIP, perceived successes, and recommended improvements.

Informal interviews with local implementers were conducted during site visits and at training events.

Questionnaires

Three questionnaires were used: (1) Key Contact Questionnaire, (2) Follow-Up Feedback Form, and (3) General Survey. Each one is described below.

Key Contact Questionnaire. In each LEA, for each topic implemented, the project's key contact person was required to complete two versions of the questionnaire: a "pre" version in September 1982 and a "post" version the following May. Items on the questionnaire related to level of implementation (e.g., numbers of schools, grades, teachers, classes, and students involved), LEA objectives for the SITIP project, and extent of dissemination of the topic within the LEA.

Follow-Up Feedback Form. LEA participants of MSDE training or follow-up events were required to complete feedback forms. Items on the forms related to such features as clarity of objectives, utility of the activities, quality of support and assistance from MSDE staff, and future needs.

General Survey. A general survey was developed by RBS and completed by up to 25 respondents in each LEA from three role groups (e.g., central office, school administrators, teachers). Survey items related to implementation, perceived impact, dissemination, and technical assistance.

Document Analyses

All materials developed by MSDE for planning, training, and communication about SITIP were reviewed by RBS. Materials (including video tapes) developed by all LEAs used at follow-up meetings and state conferences were also reviewed. Some LEAs also provided copies of classroom materials, training packages, and evaluation reports.

Student Assessment

While the General Survey, completed by local educators, included questions relating to perceived program impact on students in terms of attitude, behavior, and achievement, data were also collected directly from students to determine their attitudes and to assess achievement. MSDE expected all 19 "veteran" LEAs (24 project sites) to assess program impact on students, and to report the results to RBS. "New" sites (5) could submit data if they wished. In fact, usable affective data were received from 14 LEAs, and usable cognitive data were received from 9 LEAs. Eleven LEAs submitted no usable student data of any kind. Of those eleven LEAs, one was a "new" site.

Student Attitude Measures. LEAs could elect to use a given questionnaire or one of two surveys to assess attitudes.

The questionnaire (elementary and secondary versions) measures students' enjoyment, interest, and perceived learning. LEAs using this questionnaire were told to:

1. Administer the appropriate (elementary or secondary) questionnaire to SITIP students twice -- once half-way through the year (or course) and once at the end, asking students to respond for the SITIP class in comparison with others for the same subject.

2. Score and analyze responses by class, assigning each verbal response a numerical score: a lot = 5, a little = 4, don't know = 3, not much = 2, not at all = 1.

3. Tabulate responses by class, by time, by item, and send them to RBS.

The surveys are more complex than the questionnaire. The Learning Environment Inventory (secondary level) has eight scales measuring the following areas: competitiveness, satisfaction, difficulty, friction, disorganization, apathy, favoritism, and environment. The My Class Inventory (elementary level) measures the first four areas mentioned above. LEAs interested in using these surveys to measure student attitudes were told to:

1. Obtain copies of the survey manual from MSDE staff, determine appropriate scales, identify relevant items, and produce copies of the resulting measure to be used with students.

2. Use the measure as a pretest/posttest with SITIP students. (Control students -- matching classes taught by the same teacher when possible -- may also be involved.)

3. Alternatively, use the measure as a posttest only, either: (1) asking SITIP students to complete it twice, once for the SITIP class/subject and once for a similar class/subject, possibly taught by the same teacher; or (2) having SITIP students complete it once, and attaching to the results a note from the teacher as to hoped-for responses.

4. Score and analyze results, and send summaries to RBS.

Achievement Measures. LEAs were required by MSDE to assess student achievement. Guidelines stated:

> Achievement may be measured by the CAT or other norm-referenced tests, or by criterion-referenced measures. While it is theoretically desirable to pretest and posttest students comparing results of SITIP students with similar populations in "regular" classes, this traditional design is not always possible. Alternatives include: (1) long term trend analysis comparing "posttest only" results with those that might be commonly expected, or (2) pretesting and posttesting SITIP students using criterion referenced tests. Whichever method is used, it should be understood that "claims of program success" or "objective value" of SITIP should be made with caution.

Specific procedures were described referring to use of various kinds of measures: California Achievement Test, other norm-referenced tests, or criterion referenced tests developed by the LEA or classroom teachers.

Analysis and Reporting

Data were analyzed for each question by model, by LEA, and by role group. Also, data were analyzed to determine correlations among activities, role group involvement/investment, and outcomes.

Data were analyzed as soon as possible after collection. Summaries were prepared and reports made to the MSDE team, orally about once a month and in writing for formal events. Turn around time for those written reports was usually seven to ten days.*

This system of on-going analysis and reporting assisted the MSDE team in making data-based decisions to plan interventions and make program improvements.

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* Several reports were developed about SITIP activities for the period December 1980 to June 1982. During the 1982-83 school year, copies of some of these documents were reviewed with LEA teams, LEA superintendents, and MSDE assistant superintendents.

IV. STATE INITIATIVES AND ASSISTANCE

In support of local implementation of four models of instructional improvement, the Maryland State Department of Education (MSDE) initiated activities relating to three areas: planning, training, and technical assistance. In order to carry out those activities effectively, organizational structures and mechanisms were established which built upon previous efforts. This chapter presents general background information, describes organizational structures, reviews events for the three areas of activity, and presents related conclusions.

General Background

In the fall of 1980, MSDE initiated the School Improvement Through Instructional Process (SITIP) program, which involves local education agencies (LEAs) in implementing instructional models proven to be effective in increasing student achievement. The models are: Active Teaching, Mastery Learning, Student Team Learning, and Teaching Variables. All four models are research-based and were selected by MSDE as potentially useful to all schools for improving instruction in structured academic curricula.

Year 1: 1980-81

During the 1980-81 school year, teams of educators attended orientation conferences conducted by the researchers/developers of the models. Then 19 LEAs submitted plans to implement one or more of those models, received grants (up to $5000 per LEA per year), and participated in further training and planning activities sponsored by MSDE.

Year 2: 1981-82

During the 1981-82 school year, nearly 700 teachers in grades K-12 used one or more of the models in mathematics, reading/language arts, science, social studies, or other academic areas. In each of the 19 LEAs, SITIP teams were formed, including teachers, school-based administrators, and central office staff. These teams were assisted by MSDE technical assistants (TAs)--two people per model--who visited local sites, facilitated problem-solving and networking, and conducted one or two "follow-up" training events attended by all teams implementing a given model.

In addition to conducting activities relating to a specific model, MSDE also sponsored an Instructional Leadership Conference in May 1982 focusing on quality instruction (addressed by Barak Rosenshine) and staff development (addressed by Bob Bush and Bruce Joyce). The conference was attended by about 500 local educators, including SITIP team representatives. (MSDE staff also attended a conference conducted by the same presenters.)

To further reinforce the instructional improvement theme, MSDE commissioned Research for Better Schools (RBS) to write a paper synthesizing research on instructional improvement and planned change.* That paper was subsequently used as a knowledge base for several MSDE-sponsored training events in the 1982-83 school year.

Year 3: 1982-83

During the summer of 1982, the five LEAs that initially had not participated in SITIP became part of the program and received appropriate assistance and funds from MSDE. Funding, assistance, and model-specific follow-up training events continued for all LEAs throughout the year.

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* Roberts, J.M.E., & Smith, S. Instructional improvement: A system-wide approach.

In early fall 1982, an RBS evaluation report covering the 18 months beginning December 1980 was released, and the executive summary and sections relating to local implementation of specific models were distributed and discussed by key interest groups. Some findings influenced subsequent activities.

The spring 1983 Instructional Leadership Conference included presentations made by each of the 19 LEAs first involved in SITIP, and focused on teacher effectiveness (Madeline Hunter) and planned change (Karen Louis). Those two presenters also addressed MSDE staff and college faculty at separate conferences. The RBS synthesis paper was used as advance reading for the LEA conference, and was the basis of several other presentations and training events to state and local administrative and supervisory staff.

By June 1983, 23 LEAs were committed to a third year of SITIP implementation, all with matching state funds, and all planning expansion.* In July, MSDE sponsored a Summer Institute to train new implementers and assist local team planning.

The SITIP design calls for flexible state leadership, and involvement of all role groups in planning, training, and implementation. MSDE sponsors planning and training events, carries out technical assistance and evaluation, and facilitates local implementation and dissemination. Local involvement is voluntary, but lip service compliance is not accepted as implementation. Local investment (time, money, and commitment) is high and is influenced by the nature of the design, the quality of technical assistance and training, and the perceived value of the models implemented. In general, as SITIP gained visibility within the state, central office staff (especially superintendents and assistant superintendents) gave more attention to the program and to the relevant research bases.

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* One LEA does not plan expansion and did not request MSDE funds for the 1983-84 school year. Interested teachers/schools may continue to implement the SITIP model on their own.

Organizational Structures

The organizational structures used for SITIP evolved over time to ensure appropriate participation of role groups and hierarchical levels. Multiple channels of communication were used, with careful attention to sending consistent, clear, timely messages, and to maintaining personal contacts so that local educators could readily exchange information with MSDE. While appropriate attention was paid to lines of authority, cross-level or cross-division mechanisms were also used or developed to facilitate coordination. This section outlines the structures and mechanisms which did evolve. It refers to MSDE decision-making, the placement and responsibilities of MSDE staff assigned as technical assistants, and MSDE/LEA communication.

SITIP was initially designed by staff of two departmental units of MSDE, building on needs and successes of existing programs relating to professional development academies, technical assistance, Project Basic (the state competency-based education program), and the implementation of research-based processes and models. Once approved by the state superintendent, SITIP was reviewed by the Instructional Coordinating Council (ICC) -- the state superintendent, assistant deputy superintendent, and MSDE assistant superintendents each responsible for a particular division/department. ICC members agreed that SITIP would become a jointly-sponsored program, coordinated by the assistant deputy superintendent (ADS), and supported by the person time of selected division staff with field responsibilities. These staff became the

SITIP technical assistants (TAs), each "expected" to spend about two days a month on the program. They continued their usual tasks, and, for SITIP, reported to the ADS.

The SITIP TA team was chaired by the ADS and included eight TAs (two per model) drawn from the Divisions of Instruction; Certification and Accreditation; Instructional Television; Library Services; Compensatory, Urban and Supplementary Programs; and the Office of Project Basic. The team met monthly to review progress, assist each other or share materials, and to plan forthcoming activities. Individual members took on specific tasks most closely relating to their "regular" work. Most general administrative work (e.g., coordinating local plans and allocating funds) was undertaken by the two TAs who routinely reported to the ADS. Each partnership was free to determine what technical assistance should be offered and how work should be shared. Members were expected to network about SITIP within their own divisions, spreading successful concepts and building a general knowledge base among MSDE staff. This communication was not as strong as was initially planned.

Communication between MSDE and the 24 LEAs initially involved the ADS and LEA superintendents, and that channel continued to be used for formal information exchange. Subsequently, the local council of assistant superintendents (that meets monthly, chaired by the ADS) became a communication channel. The SITIP model required involvement of cross-hierarchical local teams, and once they were established MSDE TAs could contact specific teachers, school-based administrators, and central office staff. Usually one of the latter group (or, more rarely, a school administrator) was designated as the local project coordinator and became the key contact for LEA MSDE SITIP communication. In a few cases a project coordinator was so little involved in SITIP that someone else (usually school-based) became the key contact, especially to review implementation progress or needs. Important information (e.g., about the annual Instructional Leadership Conferences) or materials (e.g., evaluation summaries) were shared in several ways through several channels (e.g., councils of superintendents and assistant superintendents, mailing, TA local on-site visits, follow-up training events), with senior administrators receiving information first, but other channels used to ensure that "desk-work blocks" did not delay or prevent communication. (Even so, such blocks did occur at times, indicating a need for TAs to encourage better communication within some LEAS.)

SITIP policies and activities were planned by the TA team, with members taking into account local needs and interests. Plans were reviewed, revised if necessary, and approved by the ICC. Operational specifics were negotiated with LEA superintendents and SITIP teams. In general, the SITIP TA team took primary responsibility for leadership and administration of the program, with the ADS responsible to the ICC for maintaining quality and cost-effectiveness.

Planning

This section reviews planning processes and activities initiated by MSDE. Following a brief review of efforts up to June 1982, two areas are addressed: planning within MSDE, and planning with LEAs.

Planning 1980-June 1982

The preliminary design of SITIP was developed in 1980 by MSDE staff, reviewed and approved by the ICC and the LEA superintendents' council, and put into action by staff responsible for staff development and Project Basic. By July 1981, the SITIP TA team had been formed, and planning responsibilities were assumed by that group (with review and approval by the ICC). Planning for the first 18 months focused on:

- Overall design: program purpose; leadership; funding and other means of support; substance, process, and procedures; training; local participation requirements; and evaluation

- Modification of the design: consideration and initiation of changes indicated by the relative success of early activities (e.g., inclusion of technical assistance, flexibility in local involvement issues)

- Specific training events: the orientation conferences for the four models, matching summer institutes, follow-up activities conducted by TAs, and the 1982 Instructional Leadership Conference

- Local planning: guidelines; procedures; clarification of the reality of SITIP intentions (e.g., requirement for cross-hierarchical team involvement, and real--not lip service--implementation)

- Local planning modification: reformatting of guidelines; negotiation of changes or reductions in LEA intentions based on clearer understanding of the demands of SITIP models

- Evaluation: initial design, and subsequent modification to use fast feedback on critical events to inform decisions.

Planning Within MSDE (June 1982-June 1983)

Within MSDE three types of planning activities occurred: (1) resource allocation and policy making by the ICC, (2) program modification by MSDE divisions, and (3) program development and modification by the TA team.

ICC planning related to SITIP occurred during their regular monthly meetings. The ICC reviewed progress reports and TA team recommendations, and subsequently determined resource allocations. For instance, continuation of TA support was approved for the 1982-83 year (at 10% time for each TA) and for the 1983-84 year (at 15% time for each TA). Local grants were approved, with from $3000 to $5000 available for each LEA, but, for 1983-84, participating LEAs had to provide matching funds. Funding for Instructional Leadership Conferences, follow-up training, and evaluation was also approved, with amounts for the 1983-84 year cut by about 40% (reflecting overall budget cuts).

MSDE division planning was independent and case-specific, involving modification of existing programs to incorporate concepts, strategies, or content of SITIP perceived as valuable and relevant to particular programs. Influence or initiative originated from ICC members (division directors), TAs, or branch chiefs who read SITIP materials or participated in SITIP-related activities. For instance, an ICC member (director of the Division for Compensatory, Urban and Supplementary Programs) gave a research synthesis to a branch chief. Impressed by the synthesis, the chief discussed implications with the TA in his branch. Together, they drafted tentative plans, expanded ideas with other branch staff (and RBS), then used SITIP-related knowledge and processes for their annual state conference (attended by Chapter I coordinators and LEA assistant superintendents). In another division, a major program was launched (Utilizing Research to Affirm Teacher Education--URATE), in which researchers (e.g., Berliner, Cohen, Hunter) addressed representatives of institutes of higher education. Planning for URATE, and for ways to link URATE and SITIP participants, involved SITIP TAs and MSDE staff of the Division of Certification and Accreditation. Individual TAs were influenced by the SITIP knowledge base (on instructional improvement and planned change) and incorporated it in their "regular" work in various ways. Also, the 1982 Instructional Leadership Conferences (focusing on staff development) stimulated review of practices in several divisions, with some modifications to increase impact.

TA team planning occurred during regular monthly TA meetings and subsequently by sub-groups or individuals accepting specific tasks. Planning related to all areas of the program, with most attention to training: Instructional Leadership Conferences, Follow-up, sessions and the 1983 Summer

Institute); the improvement of assistance to LEAs; and to evaluation. The more complex an area of activity, the earlier the planning began.* In general, an open systems planning approach was used: objectives and target audiences were specified; substance and process were developed together; material and political support were taken into account.

- Training: General level planning for the '83 Conference and Institute began in May 1982, with main objectives, target audiences, presenters, and resources determined by June. Specifics were determined subsequently, with all LEA superintendent approvals in hand by December '82. Follow-up planning was initiated three to six months before a given event.

- Assistance: Planning was on-going, flexible, context-specific, anticipatory, and proactive as much as possible. SITIP administrative efforts (e.g., collection of LEA PEPPs forms, identification of LEA key contacts) to facilitate formal documentation or funding requirements were coordinated by one TA: energy and enthusiasm were relatively low for these routine activities. SITIP program efforts (especially strategies to overcome specific barriers to local implementation) received much greater attention, with full days spent in July 1982 and May 1983 reviewing and planning technical assistance strategies and activities (in light of relevant research).

- Evaluation: Planning was interactive, with RBS staff and TAs reviewing and modifying annual designs each June, then TAs reviewing designs with LEAs at the beginning of the school year. Evaluation of training was planned as events were planned. Primary planning/design responsibility was assumed by RBS. Planning for review of evaluation results, or consideration of findings in program improvement was the responsibility of the TA team.

Major outcomes of these planning activities (other than the implementation of the plans) included: (1) a general knowledge of SITIP by most MSDE staff, (2) sufficient commitment or interest by senior and middle management to be willing to explore elements or knowledge bases of SITIP, and to continue (and expand) cooperative support for technical assistance, (3) increased knowledge and skills in instructional improvement and planned change by members of the TA team (which informally filtered back into other program areas), and (4) application of SITIP-related information, strategies, or processes in various existing programs. While some programs were influenced by SITIP, there was little impact on policy or practice of other instructional programs. This reflects less on the SITIP design than on organizational norms: established philosophies and priorities of individual divisions outweighed the possible value of the SITIP knowledge base, and the pressures of everyday tasks outweighed the appeal of information offered informally by TAs.

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* Complexity related to: extent of participant input in planning; process for approval and/or funding; number and variety of role groups involved as participants and/or presenters; number and variety of content areas or models addressed.

Planning With LEAs (June 1982-June 1983)*

Planning related to SITIP between MSDE and LEAs used several channels, involved various state and local groups, and related to: planning and project administration, implementation, evaluation, and training. For each topic, a given channel (role group) might carry out any of three responsibilities: review, commitment, or involvement. Table 4 presents topics and channels, and the following discussion reviews each topic and then each kind of responsibility.

Usually, the Assistant Deputy Superintendent (ADS) represented MSDE for planning activities with LEA superintendents and assistant superintendents. Sometimes the State Superintendent was involved, especially for formal communication of new efforts. Occasionally TAs were involved, especially for specific on-site review or problem-solving. SITIP TAs were primarily responsible for planning with local project directors, evaluation coordinators, and SITIP teams. While almost all communication or activities related to planning were initiated by MSDE for general SITIP activities, LEA groups

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* Planning within LEAs (e.g., implementation design or the specifics of evaluation), is not discussed here; the focus is on MSDE initiatives.

Table 4

MSDE/LEA Planning Topics and Channels

Topics / Channels	Project Administration	Implementation	Evaluation	Training
LEA Superintendents	review commitment involvement			review commitment
LEA Assistant Superintendents	review	review	review commitment	review involvement
LEA Evaluation coordinators			review commitment	
SITIP Project Directors	review involvement commitment	review involvement commitment	review commitment	review involvement commitment
SITIP Teams	review commitment	involvement commitment	review commitment	review involvement commitment

also initiated some planning (e.g., topic selection for the assistant superintendents' conference, October 1982), and individual LEAs also invited TAs to participate in local planning.

General SITIP planning and project administration included a requirement by MSDE that each LEA complete a PEPP (Promising Educational Program or Practices) form. These single-page forms addressed objectives, target audience, staff development, etc., and so served as summaries of local intentions. PEPPs were compiled and distributed to all LEAs, at the request of local superintendents, to facilitate local networking. In 1981, 19 LEAs completed PEPPs which covered activities through June 1983. However, the five LEAs that were not involved at first, decided to participate in 1982. Those five local superintendents initiated the request; they were influenced by colleagues from other LEAs who were impressed with SITIP. The "new" LEAs needed to complete PEPPs and apply for MSDE funds (approximately $3000 per LEA for one school year). Preliminary negotiation involved the ADS and the five LEA superintendents. Subsequently, TAs visited those districts, reviewed SITIP activities, conducted orientation/training on models of potential interest,* and assisted LEA teams in developing plans for implementation. During the 1982-83 school year, further MSDE/LEA interactions for project administration for all LEAs occurred in relation to: (1) planning and funding for the next year, (2) coordination of existing implementation with MSDE training and with local plans to expand, and (3) clarification of state initiatives or requirements (e.g., for documentation or allocation of funds).

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* Two LEAs chose Active Teaching, and each of the other models was selected by one LEA.

There were few implementation planning initiatives by MSDE, except with the five "new" LEAs. In general, the focus was on maintaining communication (networking) so that good ideas could be shared across districts. In a few cases, especially where there were staff reassignments, TAs worked with SITIP teams or project directors to "trouble-shoot" unanticipated problems and modify plans. In the second half of the year, most LEAs requested TA review of plans or involvement in planning for implementation in the 1983-84 school year. Implementation issues were influenced by findings reported in the evaluation of the first 18 months of SITIP.

For the 1982-83 school year, LEAs were more involved in planning for evaluation. While MSDE and RBS developed the overall design and measures, each LEA was required to make decisions within the given framework. MSDE TAs reviewed the design with LEAs and worked with project directors or evaluators to clarify specific activities. Of all areas, this one created some planning (and implementation) problems, partly because LEA evaluation plans had to be revised in 1982, and partly because "ownership" and understanding of the design and related tasks were not clear in some cases. In general, some LEAs did not follow through on MSDE initiatives; they submitted appropriate written plans but did not implement them. Also, in this area, some TAs were not strongly proactive and so did not volunteer assistance until the need became very apparent, by which time it was too late (e.g., to collect data or plan pre/post tests).

Planning for training took the greatest amount of time and effort of both MSDE and LEA staff. Statewide events included a three-day Summer Institute (July 1983) for 200 participants, a one-day Instructional Leadership Conference (May 1983) for 500 participants (plus similar events for college faculty and MSDE staff), and four model-specific follow-up meetings.* In addition, TAs conducted training at the request of specific LEAs. SITIP-related training activities (e.g., the Assistant Superintendents' Retreat, and site-specific follow-ups) were planned or coordinated by TAs, the ADS, and local staff, and similar efforts planned by other MSDE divisions (e.g., Chapter I Conference, URATE) involved at least one TA team member and required coordination with local SITIP teams. All of these events required careful planning and some kind of formal or informal needs assessment, evaluation, and follow-up. Coordination among events was facilitated by organizational structures (including the fact that there are only 24 LEAs in the state), but was, nevertheless, a challenge that was addressed satisfactorily by the TA team.

Across the four areas addressed (project administration, implementation, evaluation, and training), and for each of the five local groups (superintendents, assistant superintendents, evaluators, project directors, and SITIP teams), there were three ways in which LEA staff participated in state-local planning: review, involvement, and commitment.

For review, MSDE shared preliminary ideas or draft documents with a particular group. Local input was invited and was usually given as suggestions for minor modifications. Since SITIP is voluntary, any LEA with strong negative reactions to tentative plans had the option not to participate.

For involvement, MSDE invited local input during planning, sometimes as an informal needs assessment, sometimes through a series of discussions with individuals or groups. Local influence on MSDE plans was strong, especially for training. For instance, informal needs assessment of teams might identify topics to be addressed and a preferred format for use of the time available. Then, after MSDE TAs drafted a general agenda, specific LEAs or individuals took responsibility for planning (and conducting) a given session at a conference. TAs worked with local presenters (and outsiders) to ensure cohesive planning to meet stated needs. Sometimes, local involvement was proactive (e.g., by the superintendents of the five "new" LEAs).

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* The Staff Development Branch of the Division of Certification and Accreditation shared responsibility for the Instructional Leadership Conferences. Two SITIP TAs were in that Branch, which facilitated coordination.

For commitment, MSDE requested support through action following review and approval of plans. Usually the immediate action was local planning based on the state initiative. Subsequently, implementation was expected. Commitment in the form of public support, acknowledgement, and recognition of SITIP successes was also encouraged during planning. Such commitment was given (e.g., all superintendents of "veteran" sites participated in team presentations at the Instructional Leadership Conference) and the general level of implementation of plans was very high.

Summary

Planning was flexible, interactive, on-going, and based on an open-systems approach. Existing organizational structures were used or new ones developed to facilitate communication and involve various interest groups in MSDE-initiated plans. Within MSDE and between MSDE and the LEAs, efforts were made to coordinate activities and to strengthen or integrate existing programs with SITIP (or SITIP knowledge bases on instruction and planned change). Planning was timely, made good use of resources and available expertise, and invited local participation by role groups and in such ways as to result in high commitment to the program and real (not lip-service) implementation in almost all sites. The combination of visible success and voluntary participation also facilitated planning. One particularly strong influence in planning was the expertise and position of the ADS. As chair of the ICC, the Assistant Superintendents' Council, and the TA team he could facilitate information exchange, and anticipate or design ways to link SITIP and other activities.

Training*

MSDE-sponsored training activities related to SITIP during the 1982-83 year included: (1) an Assistant Superintendents' Retreat, (2) an Instructional Leadership Conference, and (3) Follow-up Workshops on each model. Each of those activities led to site-specific activities at some LEAs. The three kinds of activities are described here, participant evaluations are presented, and follow-up activities are outlined. Attention focuses on training of local educators.

Assistant Superintendents' Retreat

This discussion describes a two-day retreat conducted in October 1982 and some related activities that occurred before and after that event.

Early in 1982, MSDE commissioned RBS to develop a paper synthesizing research on instructional improvement and planned change, organizing the information to address responsibilities of each educational role group or "level:" teachers, school-based administrators, central office staff, and staff of state education agencies (Roberts & Smith, 1982). Subsequently, RBS staff (Roberts) made presentations on the paper to Project Basic facilitators and to the ICC. The latter presentation also involved Susan Loucks of the NETWORK, who reinforced the knowledge base by presenting a synthesis of recent school improvement studies. The paper was also distributed to the LEA Assistant Superintendents, who then suggested that Roberts and Loucks should make presentations at their annual retreat.

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* Each event summarized here was described in detail in reports developed by RBS and submitted to MSDE soon after a given activity. Those reports are listed in the bibliography. The Summer Institute conducted in July 1983 is described with the 1983-84 activities.

Retreat activities. MSDE sponsored a retreat for LEA and MSDE Assistant Superintendents of Instruction at the Columbia Inn in Columbia, Maryland on October 5th and 6th, 1982. The retreat was coordinated by Dr. Richard Petre, Assistant Deputy State Superintendent of Schools, and focused on recent research on instruction and planned change.

The retreat was attended by 30 participants, six from MSDE and 24 from the local school systems. Representing MSDE was an assistant superintendent or designate from three MSDE divisions, and three other staff members. Representing the LEAs were assistant superintendents of instruction or their designates from 23 of the 24 school districts. (The representative from Baltimore City was unable to attend the retreat.)

Jane Roberts gave the first presentation on school and classroom effectiveness, which was followed by three consecutive group discussion sessions. Each discussion session was led by an LEA participant who had been previously assigned as the discussion leader. During these sessions, participants were able to discuss how the information presented could be applied to the classroom, the school, and the LEA. The formal part of the first day of the retreat ended with a brief wrap-up by the conference consultants.

On the second day, Susan Loucks made a presentation on planned change. The presentation was followed by concurrent small group discussions focusing on practical application of the research findings to individual school district change efforts. The conference consultants moved among the group answering questions and making suggestions and comments. The entire group of participants re-assembled at the conclusion of the small group discussions in order to hear the reports from the group facilitators. Dr. Petre concluded the retreat by reminding participants that:

- MSDE is trying to: 1) use research-based processes to implement school improvement programs, 2) provide effective technical assistance, and 3) coordinate programs
- The SITIP topic reports (which can be obtained from each district's SITIP project director) show where current strengths and weaknesses occur in the implementation of school improvement programs
- Supervisors need to understand the programs being implemented in their district so that they can determine fidelity and change, and make sure that instruction is effective
- MSDE and school districts must learn how to add programs with least effort and maximum effectiveness.

Participant evaluation. Participants were asked to state their reasons for attending and indicate plans for application of the information they received. Using a five-point scale (5.00 being most positive), participants also rated the effectiveness of the retreat. The reasons for attending perceived as most important for the highest number of participants were: 1) the scheduled topics were of high personal interest; 2) the information would be useful back home; and 3) the topics were directly relevant to their jobs. Aspects of the seminar receiving the most positive mean responses were: 1) the seminar provided knowledge that participants could use in their work (4.77); 2) the presentations were clear (4.76); 3) the seminar was well designed and managed (4.73); and 4) the physical facilities were adequate (4.73). The lowest mean response was for "seminar addressed my needs" (4.36) and even that was a highly positive response. In terms of future application, the largest proportion of respondents (52%) planned to share the materials and information obtained at the seminar with other staff members in their school district, including central office staff, principals, and/or teachers. A large segment of respondents (38%) also planned to use the seminar materials and information to plan and implement change efforts within their school district in areas such as staff development, curriculum development, and instructional improvement.

Most of the respondents (76%) felt that MSDE or the consultants should follow-up on the seminar by providing technical assistance to help school districts apply the information presented at the seminar to local problems and/or programs, or by providing additional information at a future meeting.

The comments volunteered most often by the respondents pertained to the overall seminar (well planned, informative, worthwhile), to the speakers (excellent presenters), and to the topic (good topic -- appreciated getting back to instruction as a major topic). In general, the retreat was perceived to be a success.

Subsequent related activities. Three kinds of activities occurred in relation to the retreat: for LEAs, at the state level, and among TAs.

Three LEAs invited the RBS speaker to repeat her workshop session for administrative and supervisory staff.

- In Washington County, RBS staff conducted training for central office supervisors and school principals, and worked with LEA staff to develop videotapes for teacher inservice. Local educators formed study groups to explore some areas (e.g., time-on-task) in more detail and plan appropriate applications. This reinforced several county instructional improvement efforts and may have influenced the county's decision to implement Mastery Learning in the 1983-84 school year. (STL was implemented during 1980-83 with SITIP funding, and AT was implemented during 1982-83 as part of another project. Both will continue through 1984.)

- In Harford County, RBS staff conducted training for elementary school principals and some central office staff. This reinforced and elaborated SITIP activities since Active Teaching is implemented in all elementary (and some middle) schools in Harford.

- In Prince George's County, RBS staff conducted training for all secondary school principals and some central office staff. This reinforced the county's efforts to train principals as instructional leaders.

Two other LEAs, St. Mary's and Wicomico, requested further information and made arrangements for SITIP implementers to attend workshop sessions conducted by RBS at the beginning of the 1983-84 school year.

At the state level, Chapter I staff decided to focus on instructional improvement for their annual conference, and invited RBS staff to assist them. The Roberts and Smith synthesis paper was used as advance reading material and RBS staff presented workshop sessions. The Chapter I conference, held in January 1983, was attended by LEA coordinators, some assistant superintendents, and some central office supervisors. Participant evaluations were positive.

All SITIP TAs reviewed materials used at the Assistant Superintendents' Retreat, and discussed the knowledge bases with RBS staff. They incorporated information and materials into their own follow-up training, and coordinated SITIP activities with other local and state efforts to apply the shared knowledge base on instructional improvement.

Instructional Leadership Conference(s)

This discussion describes three inter-related conferences conducted in May 1983: for local educators, MSDE staff, and college faculty. While most conference planning and management tasks were carried out by the SITIP TA team and staff of the Certification and Accreditation Division, the conferences were sponsored by the ICC and considered a joint effort of instructional divisions.

The four original orientation sessions for SITIP, held in 1980-81, brought nationally-known speakers to address an audience of cross-hierarchical teams. Speakers also addressed MSDE staff on separate occasions. The events were successful, so in 1982 an Instructional Leadership Conference was conducted at which Barak Rosenshine and Bob Bush made presentations. Again, audience reactions were very positive and a 1983 Conference was planned with activities coordinated across MSDE divisions in order to meet various program interests.

The main 1983 conference was designed for local educators. In addition one speaker (Madeline Hunter) spent a day and a half with over 100 college faculty, and she and Karen Louis also spent a day with MSDE staff. The three training activities all focused on the same knowledge base, but emphasis and process varied to suit audience needs.

Conference activities. On May 4, 1983, the annual Instructional Leadership Conference was held at College Park, attended by approximately 500 participants, most of whom were local educators. The objectives were:

- to review research on the processes of planned and managed instructional improvement
- to learn the results from 19 Maryland local education agencies which have implemented planned change in SITIP (School Improvement Through Instructional Process) for the last two years
- to consider facilitating quality in teacher effectiveness.

The first objective--planned change for instructional improvement--was addressed by Karen Seashore Louis of the University of Massachusetts. The second objective--SITIP implementation--was addressed by LEA teams, introduced by their respective superintendents in a series of concurrent small group sessions each lasting 45 minutes. The third objective--teacher effectiveness--was addressed by Madeline Hunter of the University of California. Both outside speakers addressed the total audience, each speaking for one and a half hours.

All participants received as advance reading materials: "Instructional Improvement: A System-Wide Approach" (Roberts & Smith), and "The Science of the Art of Teaching" (Hunter). Most LEAs provided small-group participants with handouts describing their SITIP activities, and some also used other visual aids in their presentations.

Louis' presentation was straight-forward, with some references to SITIP but few asides or anecdotes. Louis addressed three main topics: (1) current trends in school improvement and school effectiveness; (2) assumptions and strategies of planned change; and (3) planning dilemmas.

Each local SITIP presentation was introduced by the LEA superintendent or a designate, and conducted by a team of local educators. All presentations included reference to the MSDE-sponsored activities for initial team training and subsequent follow-up, and also outlined the model. Usually, central office staff provided introductory and background information; principals summarized the implementation process or reviewed evaluation findings; and teachers described actual classroom experiences.

Hunter's presentation was relaxed, and included examples and anecdotes to illustrate key points. She talked about how to produce an effective school, and discussed three kinds of knowledge: (1) propositional--what; (2) procedural--how; and (3) conditional--when and why; emphasizing how most teaching centers on propositional, with little concentration on procedural, and hardly any emphasis at all on conditional knowledge. Hunter also reviewed three decisions made by educators that strongly influence effective teaching. These decisions are: (1) the content to be taught, (2) the behavior of the learner, and (3) the behavior of the teacher.

Participant evaluation. Participants rated presentations and the overall conference on a five-point scale (5.00=excellent). They were asked to offer negative or positive comments and to indicate future needs or plans.

Mean ratings for presentations are presented in Table 5. They range between 3.09 and 3.93 for Louis and 4.73 to 4.87 for Hunter. Respondents considered Louis' presentation to be average to good and Hunter's presentation good to excellent. Of the 63 positive statements made about Louis' presentation, 22 commented on the speaker's expertise and general knowledge of the content, and 21 considered the presentation well organized. Of the 100 negative statements, 64 considered Louis' presentation too long, and 19 criticized the delivery. Of the 75 positive statements made about Hunter's presentation, 21 commented on the speaker's content knowledge, and 17 enjoyed the delivery. Of the 10 negative statements, 3 wanted more time, 3 related to facilities (poor amplification), and the others found the content simplistic or inappropriate for their needs.

Both rounds of LEA presentations were considered by the respondents to be of "good" quality as evidenced by the overall mean ratings on all seven evaluation items of greater than 4.00. Within each topic (AT, ML, STL, TV), the ratings averaged across the role groups on the seven evaluation items were all greater than 3.00 (average). Mean ratings tended to be lowest for TV, and highest for AT and ML. Of the 51 positive comments volunteered by the respondents, 24 enjoyed the speakers (varied, enthusiastic, teacher involvement in presentations) and 10 appreciated the quality of the content. Of the 35 negative comments about the LEA presentations, 22 respondents mentioned the facilities (crowded, bad accoustics, difficulty seeing), and 5 commented on the content (too much, inappropriate, not new).

Table 5

Mean Ratings for Presentations:
Instructional Leadership Conference, 1983

Objectives	Louis	Hunter	LEA Sessions	
			Round 1	Round 2
Clarity of objectives	3.93	4.75	4.33	4.18
Relevance of objectives	3.67	4.73	4.17	4.07
Attainment of objectives	3.58	4.77	4.23	4.11
Quality of content	3.56	4.80	4.25	4.13
Quality of presentation	3.09	4.87	4.28	4.19
Quality of overall activity	3.26	4.81	4.18	4.05
Quality of materials			4.05	4.07

Responses can range from 1.00 (poor) to 5.00 (excellent).

For the overall conference, all five evaluation items received mean ratings of 4.00 or above, indicating that the respondents judged the conference to be of "good" quality. Of the 50 positive comments volunteered by respondents, 29 related to the speakers, with most appreciating LEA presentations (14) or Hunter (11). Ten respondents appreciated the quality of the content, and nine liked the design (balanced use of time, session choices, etc.). Of the 43 negative comments, 18 criticized the facilities for small group sessions, and 13 related to the speakers.

Table 6

Mean Ratings for the Instructional Leadership Conference Overall (1983)

Objectives	Mean Rating
Quality of advance reading materials	4.12
Quality of conference design	4.08
Quality of the facilities	4.21
Quality of the overall conference	4.10
Value of the conference	4.04

Responses can range from 1.00 (poor) to 5.00 (excellent).

Respondents were asked to indicate future actions. The largest percentage of respondents (71.4%) indicated that they would discuss further with their colleagues the information that they gained from the conference. Only 5.8% of the respondents did not have any future plans.

In general, the conference was successful, particularly the presentations by LEAs and Hunter. While the content of Louis' presentation was valuable, participants reacted negatively to her delivery, which, in comparison to Hunter, was perceived as dry and academic.

Related activities. The conference for LEAs was flanked by two similar conferences, one for faculty of colleges of higher education, and the other for MSDE staff.

The former was held at Towson State College, consisted of one-and-a-half days of sessions conducted by Madeline Hunter, and was part of the URATE series. The content was the same as that discussed for the LEA conference, but Hunter went into more detail and also engaged participants during question and answer sessions. The conference was well received, and several of the 120 participants stated that they would include Hunter's ideas in their courses (teacher preservice).

The conference for MSDE staff was part of the professional staff development program, and involved both Hunter and Louis who were asked to use the same knowledge bases as they had for the LEA conference but to focus on implications for state policy and practice. Each speaker was scheduled for one three-hour general session and for two or three one-hour consultation sessions with specific groups or divisions.

Hunter addressed a large group from many divisions for her general session; two separate groups of five to eight each from the Divisions of Instruction and of Compensatory, Urban and Supplementary Programs (CUSP); and approximately 20 staff from Special Education. Her general presentation was basically the same as that given for the LEA conference. Consultation sessions followed a question/answer format and included discussion of instruction, curriculum, use of class time, student grouping, and provision of technical assistance.

Louis addressed 21 staff from five divisions for her general session, a group of six staff from CUSP, and five SITIP TAs in separate consultation sessions. The general session expanded on the LEA conference presentation, and the consultation sessions focused primarily on provision of technical assistance. All three sessions engaged participants in discussion. Key points made included:

- SEA staff sometimes also provide technical assistance which is in-person action to help local educators make decisions or behavioral changes related to their own perceived needs or goals. TA assumes that local educators make choices. TA is not a "solution in search of a problem." Good TAs tend to identify with their clients.

- Monitoring and TA should be separate roles. If they are combined, strategies must be used to "switch hats."

- TAs spend 10% to 100% of their time in the role.
  - 10% - 20% makes relatively little impact
  - 40% - 50% is minimum if time is to be protected from other responsibilities
  - 80% - 100% is ideal for effectiveness.

  Low (official) time allocations increase incumbents' stress, especially if the role is not legitimized as part of a job description with appropriate accountability.

- When TAs have little time in the role, or many sites to cover, it is a good idea to use the time to help the LEA stay on track, usually by working closely with a local champion or energizer who has enough influence to get things done. A 10% SEA TA and a 10% LEA energizer (at each site) add up to less than 20% since the MSDE TA is working with several sites, and both TA and energizer get pulled from the program by other responsibilities.

- When the program/innovation is a real local priority it is easier, and local dependence is less.

- Other "facilitators" include: TA knowledge of LEA norms; LEA understanding of SEA staff roles and program priorities; earned familiarity of individuals (credibility/trust, LEA confidence that TA really will help); shared successes; careful planning with on-going checking of the areas suggested by the "theories in use" matrix (especially political and systemic contextual influences as the program gets underway).

- "Barriers" include: lack of understanding or belief in the TA role by LEAs or other MSDE staff; loss of linking/bonding mechanisms if positions are "RIFed" or individuals change jobs.

- Institutionalization arises through cycles and passages.
  - A cycle is a series of related events e.g., a champion leaves and new person takes over. If the new person is a champion in name only, or if there is no new appointee, there may be "underground" program use, but no institutionalization; but if the new person takes hold institutionalization is more likely.

  - A passage is a change in program status, e.g., a change in the funding base, a shift from a pilot to a project, or broader implementation.

  Each major decision is crucial. While institutionalization is not guaranteed, the more cycles and passages which occur, the more likely that a program will survive. If something is "hard to undo" it's more likely to be institutionalized, e.g., rather than a single pilot site, if there is pressure for success by teachers (and others) rather than by lonely advocates or uncommitted staff.

- When outside funds stop, LEAs will continue a program if they perceive it as having subjective and/or objective value. If they have accepted funds out of opportunism, or if they find a program such as SITIP as having little value, they probably should let that program die.

- SEA may hope that LEAs will learn how to apply planned change research and build capability to repeat the process. That's rarely true, it happens only when an LEA experiences it several times. SEA TAs can, over time, build local capability in planned change.

Participants rated the effectiveness of the presentations and consultation sessions, with mean ratings ranging from 3.59 (quality of Louis' general presentation) to 4.75 (quality of Hunter's general presentation) on a scale of one to five (5.00=excellent). Overall, the conference was perceived to be in the good to excellent range. In general, most participants stated they were likely to take one of the following three actions as a result of the conference:

- use in inservice/staff development
- incorporate into program planning or policy-making
- discuss further with colleagues.

Follow-Up Workshops

This section describes follow-up workshops conducted by TAs during the 1982-83 school year.

The SITIP design provides for follow-up training each year for implementers of each model. The purposes of such events are:

- to facilitate networking by bringing LEA teams together to exchange information

- to reinforce, clarify, or expand knowledge and skills needed to implement the model
- to meet needs identified by local team members, including the maintenance of a support group and the continuing development of an up-to-date knowledge base.

Each TA team had access to funds (up to $2000 per model) and was free to use members' own judgement in designing activities suitable for the above purposes. One collaborative follow-up session was conducted and all others were model-specific and independently developed.

Follow-up events included:

- Joint meeting: AT, STL, TV, September 16, 1982 at MSDE
- ML, September 28-29, 1982 at Harpers Ferry (near Frederick County)
- STL, October 22, 1982 in Charles County
- STL, March 24-25, 1983 in Worcester County
- AT, May 17-18, 1983 in Kent County

Joint meeting. The TAs of three models--AT, STL, and TV--collaborated to conduct a one-day joint meeting at MSDE in September 1982. It was attended by 41 local educators representing 18 LEAs and addressed the following topics:

- URATE--(by C & A Division staff) how LEAs and colleges could exchange information or coordinate activities for mutual benefit.
- Evaluation--(by RBS staff) findings and reports for the 1981-82 year, and requirements for local involvement for the 1982-83 year.
- Updates--(by TAs) model-specific discussions of recent LEA activities and needs/plans for the upcoming year, including welcoming "new" LEAs to SITIP.

Participant ratings were positive, with all means above 3.69 (on a five point scale where 5.00=excellent). The update sessions were perceived as most useful by participants, although several also appreciated the information on the evaluation design and measures. While participants liked the idea of sharing information with college faculty, their interest and energy focused more on their own implementation needs. For future TA activities, participants expressed needs in the following areas: training (1 LEA), dissemination/expansion (3 LEAs), evaluation (2 LEAs), general support and resources (6 LEAs), and coordination with college preservice (1 LEA).

Active Teaching. A two-day retreat was conducted at Great Oaks Landing, Kent County, in May 1983, attended by 33 local educators representing six LEAs. Objectives included: increased awareness of activities in other AT counties, increased familiarity with research on classroom management, and ability to conduct classroom management workshops for teachers. Activities included:

- Comparative review of instructional strategies--AT (by Thomas Good) and similar designs by Rosenshine, Hunter, and Stallings (by the AT TA)
- LEA progress reports and plans--by each AT team
- Classroom management (by Barbara Clements of the R&D Center at the University of Texas)--presentations and participatory activities.

Participant ratings were positive, with means ranging from 3.39 to 4.57 (on a five point scale where 5.00=excellent), and evaluation comments indicated that most people most enjoyed the handouts provided and the group involvement activities. Future needs expressed by participants related to training and assistance (particularly teaching/learning "how tos"), dissemination/expansion, evaluation, and general support and resources. Most expressed needs were made by participants from Cecil County.

Mastery Learning. The ML TAs conducted a two-day retreat at Harpers Ferry (near Frederick County) at the end of September 1983. It was attended by 30 local educators representing six LEAs. (The seventh LEA sent representatives only for their own presentations.) The agenda--content and process--was designed to meet needs specified by participants in a pre-conference survey. Sessions on corrective and enrichment activities (by an outside consultant), on staff development (by TAI), and on testing (by LEA staff) were conducted for the total group. All others were small group concurrent sessions organized so that each participant attended at least four such sessions.

Topics addressed included:

- Designing and managing corrective and enrichment activities and analyzing and assessing prerequisite and component skills (by Walter Thompson, Mastery Learning Corp.)--two formal presentations plus large and small group question/answer sessions
- Staff development and coordination of inservice and preservice (by C & A Division staff person and TA1)--small group presentation and discussion
- Evaluation (by RBS staff)--small group presentation and discussion of results of the first year study and requirements for local involvement in the second year
- Dissemination in school and community (by Allegany staff)--small group presentation
- Assisting new schools (by Baltimore County staff)--small group presentation and discussion
- Teaming for successful implementation (by Worcester and Howard county staff)--concurrent small group presentations
- Staff development (by TA1)--presentation of relevant research to total group, and a small group presentation by Baltimore City staff
- Initiating ML (by TA2)--presentation of open systems planning and implementation research to a small group
- Test construction (by Baltimore City assistant superintendent) and testing what is taught (by Anne Arundel staff)--presentations and participatory activities for the total group
- Project review and planning for two groups--administrators and teachers.

Participant ratings were positive, with means all above 4.05 (on a five point scale where 5.00=excellent) and evaluation comments indicated that most people most enjoyed the formal and informal sharing among LEAs, and the sessions on testing. With the exception of sessions conducted by Thompson, all sessions held participants' attention. Thompson followed his own agenda which was not wholly responsive to expressed needs of TAs and participants. For future TA activities, participants expressed needs in the following areas: training (3 LEAs), dissemination/expansion (4 LEAs), evaluation (1 LEA), general support and resources (4 LEAs).

Student Team Learning. Two follow-up sessions were held, the first (October 1982) hosted by the STL pilot school in Charles County, the second (March 1983) held in Ocean City and including site visits to pilot schools in Queen Anne's and Worcester. Only the second workshop is described here.

The STL Spring Follow-up was attended by 52 local participants who spent most of the first day visiting classes using STL at Queen Anne's High School, some of the second day observing STL classes at Showell Elementary in Worcester County, and the rest of the time in total group and small group sessions conducted at the Carousel, Ocean City. Topics addressed included:

- LEA progress reports and plans--by each STL team
- Planned change and the SITIP design (by RBS staff)--presentation and participatory activities.
- STL implementation (by STL developer)--brief comment on local successes.

Participant ratings were positive, with means ranging from 4.15 to 4.49 (on a five point scale where 5.00=excellent), and evaluation comments indicated that most people most enjoyed site visits to observe STL used in the classroom. Needs expressed for the future included information and leadership in project continuation and expansion, and general support and resources. Both sets of needs were expressed in ways suggesting that they should be addressed by LEA teams rather than MSDE. However, there was some evidence that MSDE TAs would need to help LEAs in maintaining momentum, in networking among schools and districts, and in maintaining fidelity and scope and intensity of STL implementation.

Summary. Each of the Follow-up sessions led to further communication between some LEAs and the MSDE TAs. In several cases, especially for "new" counties, TAs conducted site-specific workshops, sometimes assisting local coordinators, sometimes directly conducting training. Also, since two TAs (for ML and TV) are in the MSDE Staff Development Branch their knowledge of SITIP models influenced content of workshops and training institutes they conducted for principals and others not directly involved in SITIP.

It is apparent that each Follow-up session addressed the general purposes of such events and satisfactorily met participant needs. It is interesting to note that in all cases LEA progress reports were given, an outside consultant conducted at least one session, and both formal presentations and participatory activities were included. This mix of activities appears to have been well-received, and participants particularly liked learning about others' activities--the more first-hand the better as is apparent from the STL site visits. If outside consultants were involved they were more successful if they attended to the guidelines negotiated with the TAs (all of whom seriously addressed the needs and interests of local participants). The TA attitude (and resulting behavior) that local needs for effective program implementation provide the basis for Follow-up activities, was apparent in all cases and evident to participants who responded positively by their contributions in progress reports and small group activities. The networking (affective and informative) resulting from the Follow-up sessions has contributed to the goodwill among LEAs and between MSDE and the LEAs, and has stimulated quality implementation and some expansion in the LEAs.

Summary

Training was designed for cross-hierarchical teams, was directly related to implementation of the SITIP models, included information and activities to reinforce content and process, took into account participant needs and interests, involved local teams as presenters, involved outside consultants as presenters (carefully coached by MSDE TAs), and was provided on the understanding that MSDE would provide assistance for LEAs wishing to follow through ideas with a larger number of local educators. The various kinds of training events reinforced each other, and MSDE also tried to establish a common knowledge base for all hierarchical levels. Communication among TAs and through the ICC facilitated coordination, and influenced training designs and content that reinforced application of research-based instructional improvement and yet did not result in redundancy.

Participant evaluation of events and the subsequent local requests for on-site presentations and assistance provide strong evidence of the value to participants of the SITIP-related training provided by MSDE.

Technical Assistance

As stated previously, assistance to LEAs was provided by an eight-person team under the leadership of the ADS. The team carried out planning and training activities described earlier in this chapter and also worked in dyads to provide model-specific assistance to local implementers. This section describes the technical assistance (TA) system, roles and responsibilities, and impact.

The TA System

The ADS provided leadership, allocated resources, and encouraged voluntary acceptance of tasks to be done. He chaired monthly meetings (usually lasting one or two hours, but with one annual full day session), and coordinated activities across models. While he encouraged each TA dyad to be program-oriented and autonomous, he made suggestions and set limits when plans or activities did not seem to be SITIP-centered (e.g., overly ambitious training designs or dissemination plans).

The TAs were drawn from various MSDE divisions. At the beginning of the school year there were: two administrators from Project Basic; two staff development staff -- a branch chief and a consultant from the Certification and Accreditation Division, (plus a third person who was delegated only to one ML county); two instructional staff -- a branch chief and a mathematics specialist from the Division of Instruction; and two program specialists one each from the Division of Library Development and Services and of Compensatory, Urban and Supplementary Programs.

For each model two TAs were assigned. For the 1982-83 year some changes occured:

- For AT, the instructional branch chief TA participated at a low level for administration through December, then handed over responsibilities to the other TA (mathematics specialist), who was allocated (some) increased time for SITIP. In June 1983, a new TA (also a mathematics specialist) was assigned to share the work load.
- For ML, both TAs (and a delegate for one county) continued through the year, but primary responsibility was exchanged with the program specialist TA taking the lead instead of the staff development branch chief. In June 1983 one TA (in Staff Development) handed over responsibility to a new TA (in Instructional Television).
- For STL, one TA retired. A new TA (from the same division -- Library Services) was assigned, with responsibility to support all models (materials and relevant research-based information), while the administrator TA took responsibility for all tasks related to STL LEAs.
- For TV, both TAs continued with SITIP, proposing to share work equally, but finding that the administrator TA invested somewhat more effort than did the staff development TA.

The TA system was loosely-coupled, decentralized, program-oriented, and made up of highly-autonomous members held accountable for maintaining productive working relationships with LEAs. As long as local feedback to the ADS (e.g., from LEA assistant superintendents, ICC members, or RBS evaluators) was positive, each TA was free to use his/her own judgment.

When a TA needed assistance (usually recognized by the TA) he/she asked for and received help from another team member, including the ADS, and members were well aware of each other's strengths. Thus, the TA system provided support for its members, and coordinated administrative and logistical planning, communication, and resource allocation. While TAs worked as a team to plan Leadership Conferences and the 1983 Summer Institutes, and to ensure consistent and appropriate communication to LEAs about SITIP (e.g., planning and evaluation requirements, resource allocations), they did not work together for delivery of assistance to LEAs. The assignment of the TA from Library Services to provide support to all TAs appeared to be a good idea initially. However, such support was not needed by TAs (each preferred to build his/her own knowledge base and maintain specific resource files), and the incumbent was not integrated into the TA system. (This reflected primarily on systemic needs and established patterns of behavior rather than on individual capabilities: the job assigned was not perceived by TAs to be needed, and other people continued to carry out the tasks). The one weakness of the system, identified by its members, was that the small amount of time available for TA meetings had to be spent on central management tasks, and TAs would have preferred to spend more time on program tasks, building their capacity by learning from each other (e.g., content and knowledge base of the models and strategies and anecdotes of processes of planned change).

The constraints of time did not relate only to formal TA meetings but also to delivery of services to LEAs and to general administrative tasks. Administrative tasks e.g., collecting PEPPS forms or evaluation surveys, were unpopular, and most coordinating functions were undertaken by the administrator assigned to STL. In general, as a team and within each dyad, TAs made appropriate arrangements to get the work done, usually without interpersonal conflict and without things "falling through the cracks." Quality and quantity of work done were influenced by TA perceptions, by the level of effort invested in specific tasks, and by organizational arrangements within each dyad.

Roles and Responsibilities

While all TAs agreed that their responsibility was to help local educators implement the models selected according to LEA plans, each dyad defined that responsibility slightly differently. Here, roles, rewards, challenges, and tasks are discussed for the whole team with references to model dyads.

Role. With the exception of the person designated to provide general support, TAs believed that the assistance role included: coordination of networking among LEAs using the same model; on-site visiting to acknowledge fidelity use; training and coaching; trouble-shooting; and information giving. They differentiated assistance to "veteran" LEAs (encouraging independence) and "new" LEAs (building trust, training). They understood their value as outsiders in crossing hierarchical boundaries within an LEA, and were sometimes frustrated when their help was not sought (and some TAs were trying to be less proactive with "veteran" sites hoping that local educators would have learned what help to request).

Differences among TAs resulted in four different dominant role sets: AT -- trainer/coach; ML -- consultant/trainer; STL -- observer/networker; TV -- information linker/trainer. These differences were influenced by personal style and preference (e.g., AT and ML), by the nature of a model and relative availability of developers as trainers (e.g., STL), and by the number of "new" LEAs and of "veteran" LEAs in which training was done to encourage expansion (e.g., AT, TV).

Rewards. Role definitions were influenced by individual TA's motivation or perceived rewards. While all TAs were gratified by project successes and by specific "growth" of activities or people in LEAs, each of the six active TAs had a different emphasis in terms of personal rewards.

- program focus: "I want to see it work because it works" -- the excitement of facilitating a worthwhile instructional program (1)
- professional growth: "I understand the conceptual knowledge bases now. I've become an expert, and can use what I know in SITIP and in my regular role. I'm accomplishing something." (2)
- "people" orientation: "I enjoy watching people grow, and the interactive support among role groups. I like networking." (2)
- personal growth: visibility, working with highly competent people, "I like the direct involvement with a school improvement project." (1)

Challenges. Regardless of the perceived rewards, all TAs experienced common challenges. Conflicting demands -- SITIP vs. regularly assigned responsibilities -- required TAs to make choices. The most obvious choice was made by the two branch chiefs who gave up their SITIP roles, one in December, the other in June. They both argued that role conflicts -- management vs. program -- of their regular duties and SITIP TA were too great, and (somewhat reluctantly) they opted for those responsibilities for which they were more formally held accountable. Most other TAs looked for ways to combine SITIP with their regular duties. For instance the mathematics specialist integrated

SITIP and regular tasks relating to his subject area and piggy-backed site visits with other field work. Other TAs did similar things but without the subject area focus. Attempts to balance (rather than integrate) roles were less successful, partly because the official allocation of 10% time to SITIP was insufficient, and sometimes because the "regular" role responsibilities were highly demanding or very different from TA responsibilities. This conflict raised a question about the reality of priority status awarded SITIP: "If SITIP's so important, why doesn't my supervisor recognize that?" Coping behaviors -- when integration and balancing did not work -- included: 1) investment of time (evenings and weekends), 2) fire fighting -- attention to immediate "loud" crises or needs, usually relating to the "regular" role, and 3) fast fakes -- relying on existing experience rather than developing specific expertise, usually relating to the TA role.

Other challenges pertained to state/local relationships, staff reassignments, and use of resources: The relationships challenge occurred when a TA sincerely wanted to provide assistance in a client-responsive manner, but the LEA suspected that all MSDE staff wanted to enforce implementation of their own ideas and programs. Also, in some cases LEAs seemed to think that they could accept SITIP funds without actually carrying out the plans they had developed. Both kinds of local perceptions had a historical basis and TAs sometimes found it difficult to convince local staff that the plans were to be implemented and TAs could help. (This kind of challenge was encountered for all models, but not always recognized soon enough by TAs, especially when a project coordinator "told a good story."

A second kind of challenge occurred when key staff were reassigned. For instance in Calvert (AT and STL), Garrett (AT), and Kent (TV), project coordinators and/or energizers (program advocates) were reassigned, program activities faltered, and TAs needed to provide additional help in training, coordination, and communication. They also needed to try to persuade local SITIP teams to spread expertise (build an organizational knowledge base) and encourage more involvement and commitment of central office staff, rather than rely on a single trainer/leader. When school-based staff were enthusiastic, TAs were sometimes tempted to "skip over" central office staff. Though they did not do so, they were frustrated by instances of disinterest and seeming unwillingness of central office staff (new to SITIP) to support school implementation of the program.

The third challenge related to resources. While all TAs would have liked more money for follow-ups, e.g., to pay nationally recognized presenters or overnight expenses of participants, only two TAs considered lack of resources or resource use as a challenge. One argued that LEAs implementing the more complex models (e.g., ML) should receive more funds (regardless of the implementation strategy or scope); the other was concerned that SITIP projects did not make use of such resources as MSDE audio-visual materials or school media centers (including micro-computers). Neither challenge was addressed.

Tasks. The ten task areas originally identified were also addressed during the 1982-83 school year, although time allocations changed, and some areas were slightly redefined. During the seven months ending June 1982, TAs spent about 175 days on SITIP, addressing the task areas of : (1) administration and budget (5%), (2) planning (3%), (3) knowledge building, (4) materials identification or development, (5) training (22% which included time for tasks #3 and #4 which were perceived as directly related to training), (6) general support (10%), (7) site visits (40%), (8) evaluation (4%), (9) communication (10%), and (10) dissemination (6%).

During the 1982-83 year these task areas were characterized as follows:

- Administration and budget consisted primarily of distributing and collecting forms from LEAs relating to funding and to local participation in SITIP training events. It also included record keeping of various kinds. With one exception, no TA spent more than 5% of his/her SITIP time on this task area. The exception -- the STL TA -- spent 35% of her SITIP time (14 days) on this (partly because her "regular" role as assistant to the ADS made it simpler for her to do the work than for the others).

- Planning included activity among the TAs during monthly meetings to design upcoming events such as the Instructional Leadership Conferences, or liaison with URATE, interaction with LEAs (especially "new ones") related to planning and completion of PEPPs forms, planning for their follow-up training events. With one exception no TA spent more than 10% of his/her SITIP time on planning. The exception -- one of the TV TAs -- spent 25% of his SITIP time (8 days) on planning, focusing primarily on arrangements for the Summer Institute, a responsibility he undertook since it required expertise he used in his "regular" role in staff development.

- Knowledge building consisted primarily of developing expertise in application of research on planned change and one or more SITIP models. Four TAs spent between 10% and 20% of their SITIP time (up to 8 days) on this, while the others spent less than 5%. While the newly assigned TA was expected to invest time knowledge-building, the behavior was unexpected for the other three. However, all three stated that they had read widely, thoroughly understood the relevant knowledge bases, used that knowledge in their "regular" roles, and -- as was apparent in their training and assistance activities -- they developed materials and strategies relevant to local needs that demonstrated that expertise. One said, "I understand the concepts now -- I own that knowledge."

- Materials development/identification work was greatest for TV training (15% of one TA's SITIP time, about 10 days) and minimal for other models.

- Training included both conducting workshops in LEAs and at model follow-ups. Five TAs conducted training, with two of them spending about 25% of their SITIP time (12-24 days) on the activity, and the others spending less than four days. Almost all LEA training conducted by TAs was for "new" sites or where the local energizer had been reassigned. Training by TAs was needed less for STL and TV since several LEAs contracted with model developers to provide assistance. All on-site training conducted by TAs was in support of local educators and was linked to follow-up assistance and school site visits.

- *General support* included over-the-phone assistance, networking sites with common needs or interests, and sharing information. Each "lead" TA spent between 5% and 10% of SITIP time on this activity (between two and seven days).

- *Site visits* were conducted by six TAs, each spending between two and eleven days (10% to 40% of their SITIP time). The objective was for each LEA to be visited twice, with more visits for "new" sites. Specific purposes varied, and included:
  - monitoring fidelity of implementation
  - recognizing/acknowledging teachers' accomplishments to resolve problems
  - participating in cross hierarchical team meetings to review progress and determine next steps
  - working with project coordinators to design training, develop implementation plans, or determine how to overcome barriers
  - building working relationships and mutual trust at all hierarchical levels so that the model could be implemented.

- *Evaluation* was conducted by RBS but TAs determined criteria for the design, informed LEAs of their responsibilities, clarified RBS guidelines, helped LEAs develop evaluation plans, distributed and collected surveys and reports, and arranged for RBS to visit pilot sites. Four TAs contributed to evaluation tasks, each investing between two and five days (5% to 10% of SITIP time).

- *Dissemination* took up to 15% of a TA's SITIP time (from one to 14 days) and included: assisting LEAs develop presentations for the Instructional Leadership Conference (May 4); referring to SITIP or making SITIP-related presentations to key interest groups such as the ICC, professional associations, or at training academies; resppnding to requests for information from other states and from researchers in school improvement and effectiveness; and making presentations at national meetings such as AERA.*

During the twelve months ending June 1983, the TAs spent 263 days on SITIP.** Officially each TA could spend 10% of his or her time on SITIP. In practice, investments (of work days) ranged from 2% (of the TA who handed over

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* Time estimates do not include ADS contributions, which were high for this task area.

** The ADS spent time in addition to this, but that is not included in this discussion.

AT responsibilities in December) to 35%, with one partner in each dyad investing 20% or more and the other partner investing 12% or less.* Almost twice as much time was invested by TV TAs (47%) as by AT TAs (25%), with ML (32%) and STL (27%) between those two. Allocation of time (as a percentage of 263 days) is summarized for each of the ten-task areas in Table 7. It is interesting to note that investment was approximately double (in comparison to the previous year) for administration (10%), planning (8%), and dissemination (13%), and decreased considerably for site visits (15%). Also, in the 1982-83 year TAs did distinguish their own knowledge building (10%) from materials development/identification (5%) and training activities (14%). Increase in time for administration and planning was influenced by increased TA responsibility for Instructional Leadership Conferences, and (as local expansion occurred) the increase in complexity of coordination efforts. The increased time for dissemination related primarily to out-of-state presentations. The decrease in time spent on site-visits did not mean that fewer visits were made, but rather that TAs became efficient in scheduling "back-to-back" visits by geographical area. The combined time spent on knowledge building, materials, and training (29% for 1982-83, 22% for training the previous year) reflected TA's increased involvement with SITIP implementation, their own needs for a sound knowledge base, and a responsiveness to local needs and concerns.

Impact

Impact is discussed for the team and for each dyad. Relative success was influenced by many factors including:

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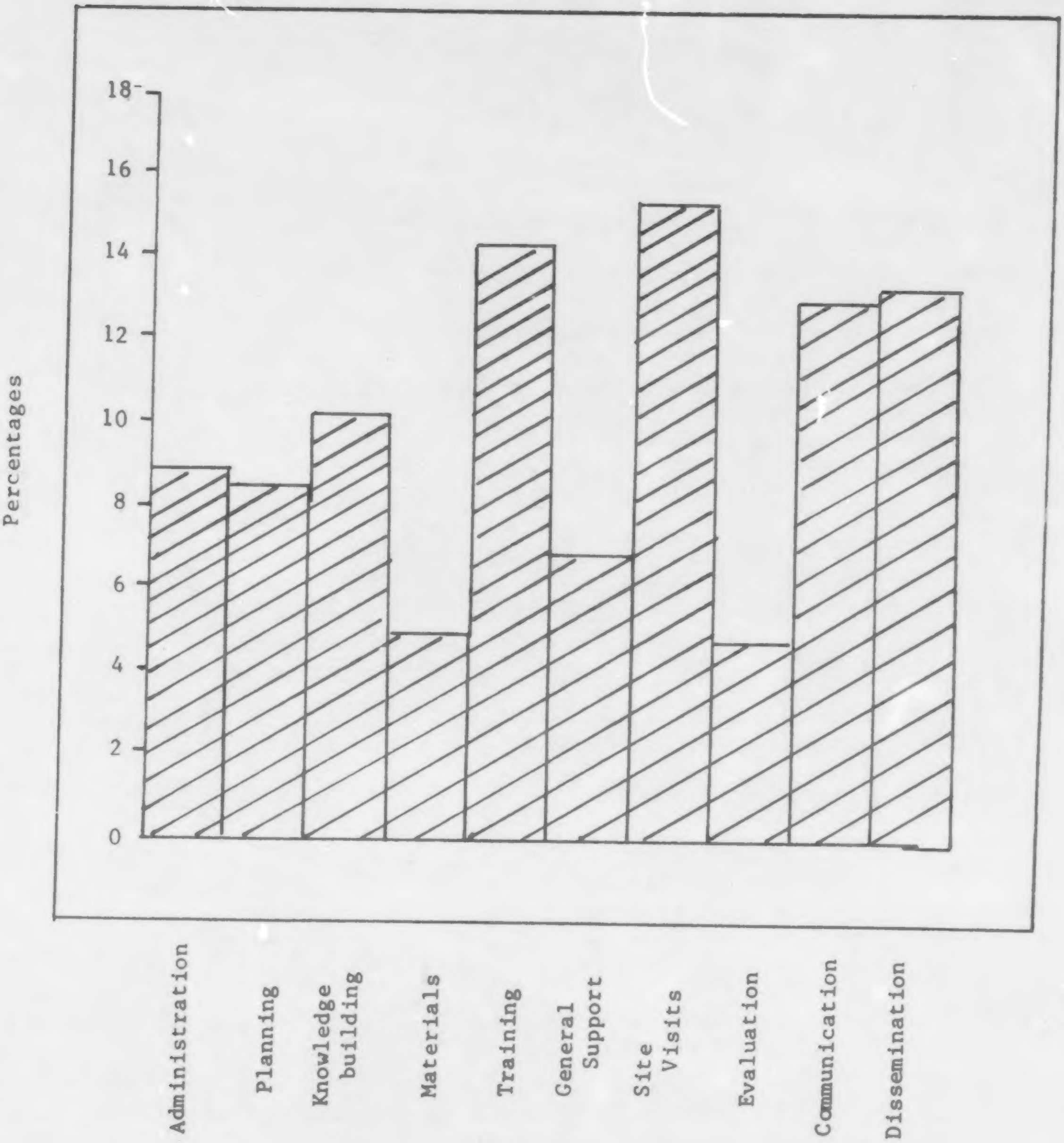
* These figures represent work days. Several TAs invested their own time in addition to this.

Table 7

Time Invested by Task: TAs 1982-83
(as percentages of 263 days)



- "Regular" role -- the relationship of regular and SITIP tasks, including supervisor's attitude to SITIP, the balance of administrative vs. technical tasks, and comparative ease of integrating processes and knowledge bases

- The models -- developer access and support and complexity of implementation requirements

- Local needs -- "fit" of model to local priorities, communication among role groups, stability of key staff, and attitudes toward SITIP and MSDE

- TA motivation or perceived rewards, the "fit" of role set definition to local needs, expertise in application of planned change and in the model(s) (or use of developer expertise).

- ADS leadership, maintenance of clear and realistic expectations, and coordination across organizational boundaries but with a tight focus on program goals.

Accomplishments of the TA team included: providing leadership for a statewide school improvement program while at the same time encouraging local ownership; maintaining communication within MSDE and among LEAs; developing networks and teaching/learning opportunities for local teams to share successes and build expertise; developing expertise among themselves and applying it not only in SITIP but also in other areas; and increasing awareness of effective SITIP practices to researchers and educators outside Maryland. The most apparent impact made by the team related to the statewide training events (discussed earlier in this chapter). By involving others in planning, the team made an impact in that area (also discussed earlier). Impact relating specifically to assistance activities included:

- increased trust and openness in communication between LEAs and MSDE

- increased effort by some LEAs to carry out their plans

- better linkage or a clearer common knowledge among hierarchical levels within LEAs

- increased involvement by central office staff in some LEAs
- changes in planning, decision-making, and/or communication (e.g., more involvement of teachers) in some LEAs.

Impact for each model, influenced by such factors as those presented earlier, included:

- AT (trainer/coach) -- better LEA/MSDE rapport, increased expertise and confidence of local educators, modifications made to plans to facilitate continued and willing participation, application of strategies to facilitate expansion, and application of knowledge and strategies to facilitate implementation in three "new" LEAs.
- ML (consultant/trainer) -- better LEA/MSDE rapport, some increased expertise of local educators, application of knowledge and strategies to facilitate implementation in a "new" LEA; and a negative impact in one LEA of confusion in cross-hierarchical communication and inadequate strategizing to overcome problems.
- STL (observer/networker) -- better LEA/MSDE rapport, application of knowledge and strategies to facilitate implementation in a "new" LEA, application of strategies to facilitate expansion, application of strategies (including accessing the developer) to maintain implementation and participate in networking.
- TV (information linker/trainer) -- better MSDE/LEA rapport, application of knowledge and strategies to facilitate implementation in a "new" LEA (including accessing the developer), application of strategies to increase involvement of central office staff and to maintain or expand implementation, application of strategies to decrease teacher resistance and facilitate continued participation.

The above examples of impact relate to TA actions. One other kind of impact -- local educators' disappointment -- related to TA inaction. Specifically, some LEAs requested assistance, e.g., clarification of evaluation guidelines, and received only part of what they needed. In other instances, LEAs wished that TAs had been more proactive or capable in offering help. In general, what was done by TAs was helpful to LEAs, but in some cases more quality and quantity was needed. While this was true to some extent for all models, the greatest need for better TA was indicated by ML sites.

Summary and Conclusions

In the context of SITIP and also of other MSDE programs, the future of technical assistance was discussed by the TA team and by others during the Instructional Leadership Conferences. Also, scenarios were reviewed as to how local SITIP activities might evolve over the next few years. These issues and ideas are summarized here, with local futures discussed first.

While some TAs advocate institutionalization of the models at existing sites, others argue that each site should make a purposeful decision to terminate or institutionalize based on the relative value (objective and subjective) of the model at that site. Several TAs also believe that all LEAs should understand all four models (their advantages and short-comings and what it takes to implement them), should also have the opportunity to learn about others, and should encourage all teachers to use STL occasionally. There is strong concensus that local application of strategies of planned change (e.g., involvement of cross-hierarchical teams, interactive support including training and follow-up assistance) are very important and should continue even if a model is terminated.

Concerns relating to future local activities include:

- Status -- in most LEAs SITIP has project status. Should it be incorporated into the regular instructional program? If so, would it survive?
- Location -- 16 of the 29 sites have a lighthouse school orientation, and three of the capacity-building sites and two of the pilot-district sites are school-based. Yet in only one site is leadership formally based at a school. Under what circumstances is it more desirable for SITIP activities to be school-based?
- Central office support -- in 11 of the LEAs there was strong active involvement of central office staff. Support was responsive to school staff needs in nine LEAs, and in four cases central office staff did little to help school staff.

> While school-based implementation may well continue with the principal's support, all sites want support from central office, and for some models and implementation strategies that support is essential. How can central office staff be encouraged to take greater responsibility for instructional improvement through SITIP?

TAs continue to explore these concerns and, to date, have addressed them on a case by case basis. They have found that some LEAs are more willing than others to continue SITIP without MSDE support (funds and assistance), and individual TAs have varying opinions about the extent of future MSDE support and the conditions under which it should be provided.

The SITIP TA role will continue through June 1984, with each person contributing 15% (about 35 days) of his or her time (instead of the 10% formerly allocated for the 1982-83 school year). Two of the eight encumbents for the 1983-84 year anticipate continued role conflict, and one of those plus two others anticipate work overload. All TAs see the 1983-84 year as crucial, and, in working with "veteran" LEAs, expect to be involved in "go -- no go" decision-making. In problem solving sessions TAs recommended for themselves to:

- become well-informed generalists with a thorough knowledge of relevant research and how it should be applied*
- continue existing successful practices such as monthly TA meetings, model follow-ups, and site visits
- find ways to increase local commitment and capacity and decrease dependency on MSDE
- teach central office staff to manage instructional improvement
- help LEAs develop or establish a cadre of people and a system for them to provide leadership, training, and coaching (to avoid reliance on a single energizer and to facilitate expansion)
- help create a positive climate, encouraging administrative and supervisory staff to acknowledge and publicize hard work and success

- enrich existing models, sharing expertise with local educators
- conduct orientation sessions and weave SITIP references into presentations for other programs for both MSDE and LEA staff.

There was no consensus on funding.** TA recommendations included: (1) allocate $50,000 per year to each LEA implementing a complex model; (2) continue funding of matching grants until an LEA is ready to assume full responsibility; (3) allocate funds only for expansion to other schools; (4) offer school-based grants. There was agreement that LEAs should not continue SITIP simply because funds were available. Policy decisions will be made by the ICC.

Recognizing that SITIP may evolve into something else, and/or that the TA role (and time allocations) may not be approved by the ICC after June 1984, the TA team expressed the hope that their experience would somehow be shared by other MSDE staff, and that the successes of the SITIP design would influence future MSDE activities.

Summary and Conclusions

MSDE initiated a statewide instructional improvement program that offered LEAs choices of exemplary models. The state department established an organizational structure across divisions, using existing expertise and mechanisms to provide coordinated support and to facilitate communication.

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* This expertise has been developed through reading, contact with visitors to Maryland (e.g., Rosenshine, Louis, Clements), contact with researchers and practitioners at outside conferences, and contact with staff of Research for Better Schools. TAs were particularly appreciative of RBS assistance.

** For the 1982-84 year each LEA was awarded up to $5,000 if it provided matching funds. MSDE will not subsidize local participation in state-sponsored training such as Instructional Leadership Conferences or follow-ups but each LEA involved in SITIP is expected to send representatives to such events.

Planning activities invited participation across hierarchies and organizational units at the state and local levels. On-going communication about SITIP interacted with related activities in other program areas so that the "message" was clear, consistent, and widespread. The "message" was the research-based knowledge on classroom and school effectiveness, and planned change.

Through various state-sponsored training activities, all members of the educational community in the state had the opportunity to learn about this knowledge base. LEA teams contributed to the training and learned from each other and from "experts". Training activities were very well received and were followed up by assistance from MSDE staff.

SITIP TAs worked as a team to contribute to planning, design training, and provide on-site assistance related specifically to the models. They also monitored plans, administered grants to local projects, and coordinated evaluation and dissemination activities so that data-based improvements could be made and successes could be widely spread.

The obvious impact of MSDE initiatives and provision of assistance is the voluntary involvement of all 24 LEAs, with all but one providing matching funds for continuation in the 1983-84 school year. The application of research on planned change facilitated the process (e.g., helped build commitment, maintained energy levels). The use of research-based models built credibility, and the provision of choice allowed LEAs to maintain their sense of autonomy. Other areas of impact arising from MSDE initiatives related to communication, coordination, widespread understanding of a common knowledge base, and a high sense of professional achievement on the part of those involved in SITIP.

Maryland's efforts are acknowledged as successful in many ways by other states and by researchers in school improvement. For instance, when Karen Louis met with the TA team she said she had read a great deal about Maryland's school improvement efforts and saw the state as being one of about half a dozen state education agencies systematically investing in helping many LEAs and schools. Maryland features that impressed Dr. Louis include: the R&D knowledge base is clear; the role of technical assistants is research based; MSDE is providing quality information/models with sound research bases; there is provision of training and funds for local implementation with relevant follow-up; LEAs have choices and are building their capacity; and there is attention to monitoring the implementation of state-funded projects.

"Outside" statements such as these, LEA reactions, and comparison to the literature on school improvement and planned change, indicate that Maryland's state initiatives and provision of technical assistance are exemplary.

V. LOCAL IMPLEMENTATION AND IMPACT

This chapter describes local implementation and impact of the SITIP models for the 1982-83 school year. The overall question addressed was:

- What was the nature and extent of local implementation and impact for the second year of the project?

The basic criterion for success was implementation of local plans:

- Did the school district carry out the activities/objectives planned by local staff?

Additional questions addressed were derived primarily from the literature on planned change:

- What were the scope and intensity of implementation and the types of local strategies used, and how did these factors influence any changes that were made?
- What were the patterns of local participation in planning and training events for each role group?
- What were the roles and responsibilities of local participants?
- What proportions of the school year and of class time were spent on the models?
- What was the impact on schools and school systems, on educators, on students, and on instruction in general?
- What needs and concerns were expressed by participants that might be addressed in the third year of implementation?

Finally, the answers to these questions were synthesized to determine:

- How did the various factors interact to influence project success?

In the following pages, local participation in state-initiated planning and training activities is summarized, and each model is discussed in turn in terms of LEA participation in planning, scope and intensity, time spent on the model, roles and responsibilities, impact, and participant concerns. LEA case reports and brief summaries are presented for each model, and a final summary discusses conclusions and implications across models.

General Background

This section summarizes the planning and training initiatives of MSDE for local school systems that were designed to facilitate local implementation.

Planning

Local school systems interested in participating in the SITIP program were asked by MSDE to develop plans and attend planning sessions. Specifically, LEAs were asked to:

- develop proposals identifying the SITIP model(s) to be implemented and describing how and why implementation was to be done (winter 1981)
- attend a planning session for clarification of models and assessment of training needs (spring 1981)
- attend a planning session to review and revise implementation plans and training needs (fall 1981)
- develop standardized summaries of final plans using the Promising Educational Practices Program Submittal (PEPPS) form (winter 1981-82). This single page form called for eight categories of information: purpose, target population, description, special considerations, staff development, cost, results, and services available.

All three role groups (teachers, school administrators, and central office staff) were involved to some extent in planning in all of the LEAs across all the of models.

> Sustained involvement was important to maintain continuity. Eight LEAs maintained involvement of a central office person, ten LEAs maintained involvement of a school administrator, and eight maintained involvement of a teacher. For six sites no one sustained participation in all six activities. At three sites minor problems occurred as a result of lack of sustained involvement: 1) a lack of awareness of other LEA activities required greater dependency on within-LEA resources (knowledge, networking, support) in one case, and 2) commitment and energy to implement the topic fully was relatively low in two sites. (Roberts et al., 1982)

For the second year of the project (1982-83), five "new" LEAs submitted PEPPS forms. MSDE staff provided planning assistance to each of these new LEAs. Continuing LEAs updated their original PEPPS forms if changes had been made. Although the major purpose of SITIP in several LEAs was to impact teacher behavior and instructional improvement to varying degrees through staff development, the majority of the districts were primarily interested in increasing student achievement.

The districts used four strategies to achieve their objectives:

- the district-wide strategy involved all schools at a given level (elementary, junior/middle, high school) and demanded the greatest level of effort among the four strategies, high enthusiasm from central office staff, and a perceived need by all role groups.
- the pilot-district strategy involved one or a few schools in the first year with commitment from central office to become actively involved in dissemination/implementation to many more schools in subsequent years.
- capacity building was essentially a staff development strategy which encouraged voluntary implementation by teachers following training conducted by those first involved with SITIP.
- the lighthouse school strategy focused on implementation of a model in a single school. Success was broadcast informally. No formal commitment was made by central office staff to actively encourage or train other schools to adopt the model of the lighthouse school.

By September 1982, four models had been adopted: Active Teaching (AT) by seven LEAs, Mastery Learning (ML) by seven LEAs, Student Team Learning (STL) by nine LEAs, and Teaching Variables (TV) by six LEAs.

Training*

The SITIP program included three kinds of training events organized by MSDE:

- Awareness Conferences for each of the four models were conducted between December 1980 and February 1981.
- Summer Institutes for each model were conducted in June and July 1981 for participants who had decided to implement the specific model. In July 1983, a summer institute was conducted for both new SITIP participants and for educators who had been previously involved. New participants attended model training sessions while "veteran" educators learned about the management of change.
- Model-specific Follow-up Sessions were conducted between December 1981 and May 1983 for those implementing the model.

In keeping with recommendations in the literature on planned change, MSDE encouraged participation of cross-hierarchical teams from each LEA, and LEA superintendents agreed to try to meet those requirements by sending teachers, principals, and central office staff to the training events. Overall attendance in terms of numbers, roles, and sustained participation across several training events was good. The training activities, especially the summer institutes and follow-ups, were attended most frequently by teachers.

In addition to those three types of training events planned and conducted by MSDE as part of the SITIP design, other related events attended by local educators were instructional leadership conferences and instructional improvement presentations.

Two instructional leadership conferences were held for state and local staff. Local superintendents were asked to include SITIP participants on their team as a reward for their efforts. At the first conference in April 1982, attended by approximately 300 participants, Barak Rosenshine and Robert Bush discussed research on teacher and school effectiveness and effective staff development.

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* This section summarizes training conducted by MSDE statewide. Detailed descriptions are presented in the previous chapter. LEA-specific training is not discussed in detail here. The LEAs used various methods of turnkey training to inservice their staff. In some counties teachers did the training, other counties asked the developers or MSDE to train their staff, while several counties used central office staff or principals as trainers.

The second conference, in May 1983, was attended by approximately 420 educators who heard Karen Louis and Madeline Hunter discuss the research on planned change and teacher effectiveness. LEA teams involved in SITIP reported on their districts' projects during small group sessions. LEA superintendents were present and introduced their district's LEA team.

The need for greater central office involvement in SITIP indicated in the 1982 SITIP report, and the general interest in research on instructional improvement and planned change expressed by state and local superintendents, led to training events conducted by RBS for MSDE and for LEA assistant superintendents and LEA-based staff with responsibilities in instructional improvement. All LEAs participated in at least one such event; three LEAs invited RBS to conduct on-site workshops.

In all of these additional training events, references were made to SITIP by the presenters, and the relationship between SITIP models and strategies and the programs conducted in other states was specified.

Active Teaching (AT)

As stated in Chapter II, Active Teaching (AT) is a system of direct instruction. Out of the 19 LEAs involved in SITIP during 1981-82, five LEAs (Cecil, Garrett, Harford, Montgomery, and St. Mary's) implemented AT. In 1982-83, two additional counties (Caroline and Wicomico) became involved in AT. This section describes the implementation of AT, including discussions on planning; scope and intensity of implementation; time spent on implementing

AT; roles and responsibilities of AT implementers; AT impact on school systems, individual schools, educators, and students; and participant concerns.

Planning

The extent of involvement of AT implementers in MSDE-organized planning activities during the 1981-82 school year is summarized below:

> With the expection of one county, all LEAs attempted to involve all three role groups (and sustain that involvement) in planning activities initiated by MSDE. However, teachers were least involved in planning (particularly in Cecil and Montgomery Counties), and school administrators in Garrett County were not sufficiently involved in planning....(Roberts et al., 1982)

For the 1982-83 school year, MSDE did not organize any group planning activities but provided individual assistance in preparing PEPPS proposals to the "new" LEAs. None of the veteran AT LEAs changed their original plans.

An analysis of local plans for the 1982-83 school year identified LEA objectives and the status of each at the beginning of September 1982.* Table 8 presents the objectives. In each case, the percent of LEAs that "hoped for," "partly achieved," or "already achieved" each objective is indicated. As can be seen, there were nine objectives identified. All were addressed to some extent by the participating LEAs. Improving student achievement in basic skills and teachers' classroom competence were the two objectives addressed by the largest number of counties. Improving student achievement in basic skills was the only objective that was "achieved" by any of the counties as of September 1982. Ensuring a match between instruction, curriculum, and tests was least addressed because it is not a component of the AT model. The remaining objectives were either "hoped for" or "partly achieved" by the counties addressing those objectives.

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* New LEAs were not required to submit information on status of objectives in September 1982. However, Caroline County did submit objectives which are included in Table 8.

Table 8

Status of Local Objectives, 1982-83: Active Teaching

Local Objectives	Status							
	Pre-(Sept. 1982)				Post-(June 1983)			
		Percent of LEAs				Percent of LEAs		
	N	1*	2*	3*	N	1*	2*	3*
1. Improve student achievement (basic skills).	6	50	33	17	6	33	50	17
2. Improve student achievement (other subjects).	2	50	50	0	3	67	33	0
3. Inform local educators about model.	4	50	50	0	6	0	50	50
4. Train educators to use model.	4	50	50	0	5	0	80	20
5. Improve teachers' classroom competence.	6	50	50	0	7	0	71	29
6. Ensure match of instruction, curriculum, and test(s).	1	0	100	0	1	0	0	100
7. Help teachers become better organized.	4	25	75	0	6	0	67	33
8. Improve time-on-task.	5	60	40	0	6	0	67	33
9. Improve students' involvement in learning (motivation).	4	50	50	0	6	0	83	17
10. Other (Incorporate Hunter's learning theory)	-	-	-	-	1	0	100	0

*1 = Hoped for
2 = Partly achieved
3 = Achieved

Note. Total number of LEAs equals 7.

Scope and Intensity of Implementation

In September 1982, seven counties were involved in AT. Caroline and Wicomico were just beginning their involvement. Cecil, Garrett, Harford, Montgomery and St. Mary's counties were in their second year of implementation. As can be seen in Table 9, the scope and intensity of implementation varied among the five "veteran" counties in June 1982 from five teachers and 180 students in one elementary school in one county, to 434 teachers and 11,910 students in 26 elementary schools in another county. Across the five LEAs, approximately 33 schools and 473 teachers in a variety of subject areas were involved in AT.

Table 10 presents the scope and intensity of AT implementation in June 1983. Across the seven LEAs, all four implementation strategies were being used (lighthouse school=3; pilot district=1; district-wide=2; capacity building=1). Approximately 581 teachers in 73 elementary and secondary schools were implementing AT. All counties used AT in mathematics, and several counties tried AT in other subject areas.

The percentage of schools in each county implementing AT as of June 1983 ranged from .6% in Montgomery County to 79% in Harford County. Across the entire state, 6% of the schools were involved in AT at the end of the 1982-83 school year.

Some major changes occurred between June 1982 and June 1983 including the two new LEAs Caroline decided to use a lighthouse school approach in two elementary schools with five teachers in mathematics; Wicomico used a district-wide strategy to implement AT in 12 elementary schools with 43 teachers in mathematics. In the five "veteran" LEAs, the scope and intensity of implementation increased somewhat between June 1982 and June 1983, but none of the five districts changed its implementation strategy. Four LEAs

Table 9

Scope and Intensity, June 1982: Active Teaching

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Caroline	New District					
Cecil	PD	4	E, J/M	20	450	R/LA, M
Garrett	LS	1	H	5	281	M,Sc
Harford	DW	26	E	434	11,910	M
Montgomery	LS	1	E	5	180	R/LA, M
St. Mary's	CB	1	H	9	684*	R/LA, M, Sc, SS
Wicomico	New District					

*Includes some duplicates

Subject Areas: R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social studies
O=Other

Type: E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

Strategy: LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Table 10

Scope and Intensity, June 1983: Active Teaching

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Caroline	LS	2	E	5	122	M
Cecil	PD	17	E, J/M	40	2,000	R/LA, M
Garrett	LS	2	H	11	443	R/LA, M, Sc, O
Harford	DW	34	E, J/M	446	19,177	M
Montgomery	LS	1	E	9	170	R/LA, M
St. Mary's	CB	5	E, J/M, H	27	1,195*	R/LA, M, SS, O
Wicomico	DW	12	E	43	1,100	M

*Includes some duplicates

Subject Areas:
R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social studies
O=Other

Strategy:
LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Type:
E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

increased the number of involved schools, two included additional grade levels, all five added teachers, and four had more students involved. Subject areas remained fairly constant.

Scope and intensity also pertains to fidelity--the extent to which teachers implement the model as designed. AT, as designed, requires the implementation of six components: pre-lesson development, lesson development, controlled/guided practice, independent practice, homework assignments, and reviews. Of 57 teachers responding to the General Survey,* 72% carried out all six components. No component was addressed by less than 87% of the teachers. Components most consistently addressed were: lesson development (by 93% of the teachers), and independent practice and homework assignments (each by 91% of the teachers). Teachers indicated that the most important components (in terms of instructional value) were pre-lesson development and controlled practice. Reviews in various forms were also considered important. The greatest fidelity was maintained in Caroline and Wicomico counties (both "new" and therefore strongly encouraged not to adapt). Greatest adaption occurred in St. Mary's (where the greatest range of subject areas were included). In general, fidelity was high, with adaption most likely to occur in subjects less "structured" than mathematics and/or in secondary schools. (AT was designed primarily for elementary mathematics.)

Time Spent on the Model**

This section discusses time spent on AT during the 1982-83 school year.

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* No data were available for Harford County.

** This information is based primarily on the responses made by a sample of implementers who completed the General Survey.

Time across the school year is discussed first, followed by a discussion of the time spent by teachers, by school administrators, and by central office staff.

Across the school year. During the 1981-82 school year, AT was used by each teacher for an average of just over three months. Some teachers from all of the counties began using AT at the beginning of the year, but in Harford most teachers did not begin implementing until March 1982. The majority of teachers continued implementing AT in their classrooms through June 1982.

During the 1982-83 school year, implementers across the seven counties were involved in SITIP for an average of eight months, with no one involved for less than seven months. St. Mary's had the lowest and Caroline had the highest average number of months involved.

In the classroom. During the first year of implementation (1981-82), all AT teachers used the model in their classrooms between 50% and 80% of the time allocated for the selected subject.

> Teachers implementing AT in mathematics used the instructional process during at least 80% of the allocated mathematics time. In other subject areas, teachers used AT for about 50% of the time allocated for that subject. This difference in the percentage of classroom time spent using AT was due to the fact that it is designed for structured learning activities, and is not perceived by teachers to be appropriate for more creative activities such as composition writing (Roberts et al., 1982).

In 1982-83, the teachers responding to the General Survey (N=63) indicated that they spent an average of 39% of their school week on AT-related activities. The primary activity for the majority of teachers was classroom implementation. However, some teachers also spent time on planning and/or on training. Elementary teachers using AT in one or two subject areas spent an average of 21% of their school week implementing AT. Secondary teachers using AT in their specific subject areas spent a larger percentage (51%) of their school week involved in AT. In general, local educators indicated that AT did not take any more or any less time than similar innovations in terms of teachers' preparation of students (e.g., grouping, pre-testing), or in terms of curriculum coverage.

School and central office administrators.* Twenty-six school administrators and central office staff across the seven LEAs spent an average of 10 days on AT. The average number of days ranged from 23 in Harford to three in Wicomico. In general, central office staff spent more time on SITIP (13 days) than did school administrators (7 days).

Thirty-seven central office staff and school administrators reported spending about the same amount of time and energy on SITIP as they had on similar previous projects. However, in Montgomery County, the central office person and school administrator answering the survey reported that "substantially more" time and energy had been spent on SITIP, while the educators from St. Mary's and Wicomico counties reported their expenditure of time and energy to be "slightly less."

Roles and Responsibilities

The SITIP design encourages involvement of cross-hierarchical teams, including: 1) central office staff, e.g., supervisors in instruction or coordinators of staff development; 2) school administrators, e.g., principals, vice principals, or department heads; and 3) classroom teachers. This section describes the people involved, what they did, and their relationship to each other from three perspectives: usual assigned roles, activities undertaken and levels of effort and interactive support.

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* No data were available from school administrators in Harford and Montgomery counties or from central office staff in Wicomico County.

Usual roles. Teachers, school-based administrators, and central office staff were all involved in AT. Of the 18 central office staff responding to the 1983 General Survey, one was in staff development, nine were in instruction, and four were in "other" areas such as curriculum development. Four had multiple responsibilities. Of the 28 school administrators responding to the survey, 27 were principals (18 elementary, 3 junior high/middle, 2 high school, and 4 no grade level indication) and one was a high school vice-principal. While both elementary and secondary teachers were almost equally represented as survey respondents, most implementation was carried out by elementary teachers: about twice as many elementary vs. secondary students were impacted by AT.

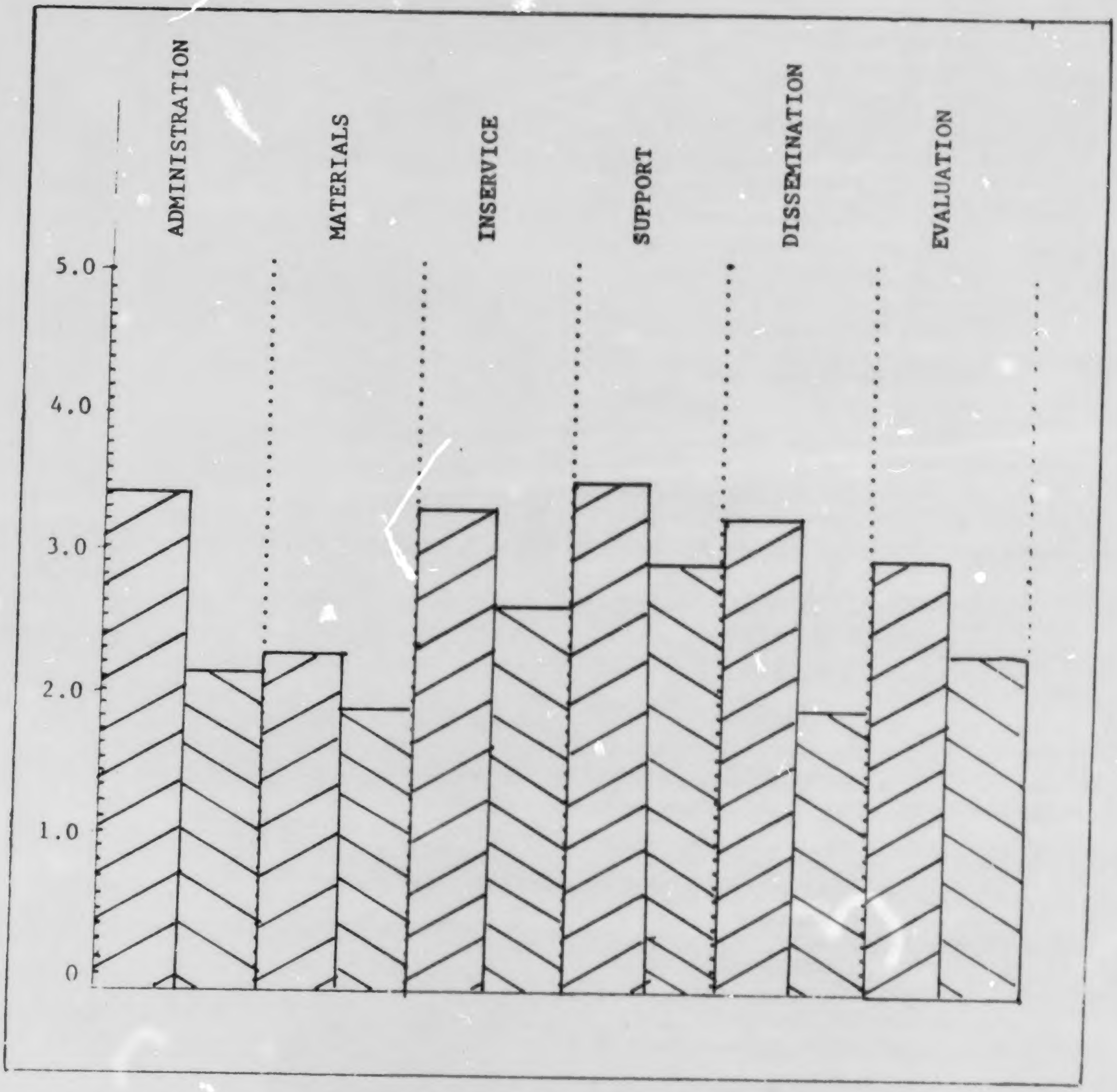
Activities and levels of effort. On the General Survey, six activity areas were identified and central office staff and school administrators were asked to indicate level of effort (time and energy) spent on each (with responses ranging from 0 "none" to 5 "a great deal"). The areas of activity were: 1) administration (including planning and budget); 2) development of materials; 3) designing and/or conducting inservices; 4) supporting school implementation (e.g., problem-solving, supplying materials, etc.); 5) dissemination; and 6) evaluation. (Mean ratings are presented in Table 11).

The level of effort spent by central office staff and school administrators on each activity area during the first year of implementation (1981-82) is summarized below:

> Central office staff and school administrators spent similar levels of effort on administration, inservice, and support, but school administrators spent more than central office staff on materials development, dissemination, and evaluation. Least effort was spent on materials development. An examination of individual responses indicates that within each county office (with the exception of Montgomery) at least one individual was involved in all six areas of activity. Most central office staff

Table 11

Level of Effort: Active Teaching, 1982-83



Values range from 0 "none" to 5.00 "a great deal" of time and energy.

▨ Central Office Staff
▧ School Administrators

> effort was spent on inservice and support, followed by administration. If other central office staff were involved, they helped this individual, most often in inservice and support, but also in evaluation, dissemination, and -- to some extent -- administration. Although most school administrators distributed their efforts in similar ways (focusing most on support, inservice, and dissemination within their own schools), three broke this pattern, indicating that they did very little in those three areas, two saying they did even less in the other three areas, and one spending more effort on materials, evaluation, and administration. (Roberts et al., 1982)

As can be seen in Table 11, during 1982-83, central office staff and school administrators combined spent the least amount of time on materials development (2.05) and the most amount of time on supporting school implementation (3.17). Central office staff reported spending more time on all areas than did school administrators.

Individual county responses indicated that there was some level of effort spent on each activity across all of the LEAs. In addition to the categories supporting school implementation and designing/conducting inservice, evaluation was ranked high in one county (Caroline), administration in three counties (Cecil, Garrett, Montgomery), and dissemination in one county (St. Mary's).

Interactive support. Teachers implementing AT could receive training/information from four sources: developers, MSDE, central office staff, and school-based staff (school administrators and teachers). The largest percentage of teachers responding to the survey (N=59)* received information and training from school administrators and teachers (46%), and from MSDE and central office staff (44% each). Only 15% of the teachers received information and training from the developer and these teachers were "veterans" who attended the Awareness Conferences and Summer Institute during the first year of the project.

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* No data were available for Harford County.

Within the individual counties, the majority of teachers in Caroline (67%) and Garrett (89%) received information/training from MSDE. In Cecil County, all teachers received training from central office staff. The majority of Montgomery (100%) and St. Mary's (88%) teachers received their training from both school administrators and fellow teachers. In Wicomico County, almost all teachers received their training from both MSDE and central office staff.

Survey respondents were asked to rate the support received from teachers, principals, central office staff, MSDE, and developers (from 1.00 = very poor, to 5.00 = excellent). Ratings of interactive support from the 1982 survey are summarized below:

> . . . for AT, central office staff were generally more positive in their assessment, rating all but the developers as good to excellent. Teachers, most of whom did not interact with MSDE staff or developers, were, in general, less positive. However, overall mean ratings indicate that each role group was perceived positively by peers and other role groups in terms of providing information, help, and general support. (Roberts et al., 1982)

As shown in Table 12, respondents of the 1983 survey* rated the interactive support received from all five role groups as 3.16 (average) or above indicating that each group was perceived positively by other educators involved in AT in terms of providing information, help, and general support. Developers received the lowest total rating (3.24) because very few of the respondents interacted directly with the AT developers. School administrators received the highest total rating (3.83). Central office staff were generally more positive in their assessment, rating all but the developers as good to

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* No data were available from central office staff in Wicomico County.

Table 12

Perceptions of Support Received: Active Teaching, 1982-83

Respondents	N	Support Groups				
		Teachers	School Administrators	Central Office Staff	MSDE	Developers
Central Office	15	4.33	4.13	4.27	4.33	3.36
School Administrators	28	4.00	3.84	3.86	3.70	3.16
Teachers	69	3.58	3.75	3.67	3.83	3.25
Total	112	3.79	3.83	3.79	3.61	3.24

Mean ratings range from a low of 1.00 (very poor) to a high of 5.00 (excellent).

excellent. Teachers were, in general, least positive in their assessments except for their ratings of support from MSDE and developers, which were slightly higher than the ratings given by the school administrators.

The mean ratings given to the five role groups by the survey respondents in each of the individual counties were above average except for the following cases:

- teachers from Harford County rated support from MSDE as below average (2.00) because most received direct assistance from central office staff (who "turnkeyed" help from MSDE)
- the school administrator from Montgomery and teachers from St. Mary's rated central office support as below average (2.00 and 2.57, respectively).

Impact

This section discusses AT impact in the area of training and on school systems, individual schools, central office staff, school administrators, teachers, and students.

Training. MSDE TAs held two follow-up training sessions for those counties implementing AT. The first session was a combined follow-up held in the fall of 1982 at MSDE with participants implementing STL and TV. Approximately 16 AT participants were present. During this joint follow-up, the 1982-83 evaluation design was reviewed by RBS and participants met in small model-specific groups to review plans and to share needs and concerns. The second AT follow-up training session was a two-day retreat held in the spring of 1983 at Great Oaks Landing, Maryland and was attended by approximately 33 LEA participants. The session consisted of LEA project updates and a presentation by Barbara Clements from the Texas Research and Development Center for Teacher Education on the research on classroom management.

AT participant evaluations of both sessions (e.g., clarity, relevancy, and accomplishment of objectives; support from MSDE) were positive, the mean responses ranging from 3.39 to 4.57 on a scale from 1.00 (least positive) to 5.00 (most positive). The majority of the AT participants most enjoyed the small group discussion activities. The needs expressed for future TA activities were varied, including requests for help in evaluation, dissemination, planning, and training.

As indicated previously, teachers responding to the General Survey indicated that they received information and training from a variety of sources, including school administrators, fellow teachers, central office staff, and state TAs. The majority of the teachers in the two "new" counties received training from MSDE (Caroline and Wicomico) and from central office staff (Wicomico). Teachers from district-wide and pilot district school systems (Cecil, Wicomico, Harford) received their training from central office and, to some extent, from state staff. School systems with lighthouse schools or teacher-directed programs (e.g., Montgomery, St. Mary's) used school-based personnel (principals, teachers) for training, with the exception of Garrett which used state staff.

The majority of teachers indicated that they understood the model (72%) and that their teaching ability had improved as a result of their involvement with AT (66%). Only 13% indicated that their teaching ability had not changed. In general, this pattern of results was consistent across the seven counties with the exception of Montgomery County where 50% of the teachers felt that their teaching ability had not changed. Less than 15% of the teachers in each county felt that they needed to learn more about AT except in Cecil (17%), Garrett (22%) and St. Mary's (19%) counties.

As mentioned previously, accurate implementation of the AT model involved the use of six components. Seventy-two percent of the survey respondents indicated that they carried out all six components and no component was addressed by less than 87% of the teacher respondents. This faithful use of the model can be related to the effectiveness of the training received by the implementers, the majority of whom indicated that they understood the model.

School system. The impact of an innovation on a school system involves changes in practice or policy that affect or could affect more than a single school or single group of educators. Systemic impact on implementing school systems included:

- policy decisions such as using AT in certain subjects/grades district-wide (3 counties) and regrouping to obtain homogeneity (1 county)
- changes in areas of emphasis such as on staff development (1 county)
- application of research on school improvement and effective teaching (1 county)
- improved communication, sharing, and cooperation among educators across the district (2 counties).

These outcomes were influenced by various factors including administrators' perceptions that teachers accepted AT and students benefitted, and that AT and the SITIP procedures were easy to implement, supervise, and administer (e.g., financing arrangements). Finally, since the the state requires students to pass a competency test in mathematics in order to graduate, some counties hoped that systematic use of AT would improve achievement in that subject.

Central office staff. AT had an impact on central office staff in a variety of ways. Central office staff felt that involvement in SITIP allowed them to gain experience in the use of a new instructional technique (2 counties), made them better organized (2 counties), gave them a means of helping ineffective teachers (1 county), made them aware of how students use time (1 county), allowed them to become more involved with students (1 county), gave them a respect for the SITIP process (1 county), and enabled them to improve instruction with the support of MSDE (1 county).

These results reflect on the individual supervisors' attitudes and behavior rather than on policy or practice decisions of the system. In general, such results are most apparent when a central office supervisor is directly involved in AT, advocating it as a technique with many of the teachers supervised.

Schools. The impact of an innovation on a single school involves only those educators within that school. AT impact on single schools included: greater continuity/consistency within those subject areas and teachers using AT (4 counties); increased interest in the selected subject area(s) in which AT was being implemented (2 counties); teacher enthusiasm and sharing (3 counties); structured daily program/improved management system (2 counties); closer monitoring/supervision of lessons by principals and supervisors (2 counties); increased awareness of school needs (1 county); better definition of student and teacher roles (1 county); adoption of a uniform homework policy (1 county); and grass-roots expansion into other subject areas (1 county). Educators from one county felt that AT was especially useful in slower, low ability classes.

These results were influenced primarily by the reactions of school-based staff to AT, particularly when a group of teachers worked as a team and/or the principal was strongly supportive of the program.

School administrators. School administrators felt that their involvement in AT enabled them to learn about a new teaching technique (3 counties), to become better organized (2 counties), to experience the satisfaction of being part of a successful project (2 counties), to become aware of an effective method of observation/supervision (3 counties), to strengthen their conviction that traditional instruction works (2 counties), and to share ideas with teachers (1 county).

These results reflect strong attitudes of instructional leadership by school administrators providing support to their teachers.

Classrooms and teachers. AT impact on teachers fell into 13 categories under the three general areas of: (1) increased knowledge, (2) improved skills, and (3) strengthened attitudes/perceptions. (See Table 13.) In addition, survey respondents assessed relative instructional value and impact on teachers in six areas on a five-point Likert scale. (See Table 14.)

Teachers across the largest number of counties reported four main teacher impact categories: (1) increased knowledge of the components of effective teaching; and improved skills in (2) organization, structure, planning, and pacing, (3) the effective use of time, and (4) in assessing and addressing student needs. School administrators across the largest number of counties reported two categories of impact on teachers: (1) improved skills in a new teaching technique, and (2) skill in organization, structure, planning, and pacing. Central office staff found that teachers improved skills in organization, structure, planning, and pacing.

As can be seen in Table 14, survey respondents in general indicated that AT was a worthwhile/workable model, with mean responses ranging from 4.29 to 4.47 (on a scale from 1.00 least positive to 5.00 most positive). Teachers

Table 13

Impact on Teachers as Reported by Each Role Group: Active Teaching 1982-83

Impact on Teachers	Role Groups (Reported in No. of LEAs; N=7)		
	CO	SA	T
As a result of AT teachers have:			
Increased knowledge			
-of the components of effective teaching.	3	4	6
Improved skills			
-in a new teaching technique.	2	5	4
-in organization/structure/ planning/pacing.	5	5	6
-in the effective use of time.	3	4	6
-in the components of effective teaching (e.g., review, lesson development, controlled practice, homework).	0	2	3
-in assessing and addressing student needs.	1	1	6
-in instruction.	3	3	2
Strengthened attitudes/perceptions			
-that traditional teaching techniques work.	0	2	0
-that teachers must teach every day.	1	1	1
-that the larger group must be emphasized.	0	1	3
-of teachers' confidence and self image.	1	1	3
-of the value of specific components of effective teaching.	0	0	1
-about teaching (e.g., involvement).	1	3	1

CO = Central Office; SA = School Administrators; T = Teachers

Table 14

Instructional Impact as Perceived by Survey Respondents: Active Teaching, 1982-1983

Impact on Instruction	Role Groups			
	CO N=18	SA N=28	T N=76	Total N=122
Instructional Value				
Works in classroom.	4.61	4.57	4.41	4.47
Is worth the work it takes.	4.67	4.50	4.12	4.29
Is a worthwhile teaching approach.	4.67	4.54	4.26	4.38
Impact on Teachers				
Teachers enjoy it.	4.22	4.07	3.95	4.02
Teachers have increased knowledge.	4.50	4.11	3.97	4.08
Teachers have increased skills.	4.44	4.18	3.91	4.05
Impact on Students				
Students enjoy it.	3.94	4.04	3.82	3.88
Students are less disruptive.	4.00	3.90	3.84	3.88
Students' achievement has increased.	3.61	3.54	3.60	3.59
Students are learning more.	3.78	3.71	3.54	3.61
Students' general behavior is better.	3.78	3.81	3.69	3.73
Time				
Teachers spend more time preparing students.	3.00	3.18	3.08	3.09
Teachers cover curriculum in less time.	3.50	3.37	2.96	3.13

Mean ratings range from 1.00 (strongly disagree) to 5.00 (strongly agree).
CO = Central Office; SA = School Administrators; T = Teachers

were consistently lower in their ratings of instructional value than were school administrators or central office staff. Central office staff gave the highest ratings.

In summary, participants indicated that AT works in the classroom and has had an impact on teachers, especially in the areas of increased knowledge of what constitutes effective teaching and improved skills in the organization of instruction.

Students. Over 24,000 students received instruction based on the AT model, and just over one third were in secondary schools. Impact of AT on students fell into 15 categories under the three general areas of improved attitudes or awareness, increased achievement, and benefits from better instruction. (See Table 15.) In addition, survey respondents assessed relative impact on students in five areas on a five-point Likert scale. (See Table 14.) Also, LEAs were asked to submit data summaries of AT impact on student achievement and attitudes.

All three general areas of student impact (i.e., improved attitudes or awareness, increased achievement, and benefits from better instruction) were reported by educators from about the same number of counties.

Teachers across the largest number of LEAs reported two main student impact categories: (1) increased achievement in mastery/retention of facts and skills, and (2) benefits from better instruction which provides a clear understanding of teacher expectations. Improved attitudes about learning/school, increased achievement in test scores, and benefits from better instruction which results in better usage of time were the three student impact categories reported by school administrators across the largest number of counties. Improved attitudes about learning/school and benefits from

Table 15

Impact on Students as Reported by Each Role Group: Active Teaching 1982-83

Impact on Students	Role Groups Reported in No. of LEAs; N=7		
	CO	SA	T
As a result of AT students have:			
Improved attitudes or awareness			
-about their learning ability (e.g., increased confidence).	1	0	3
-about their learning responsibilities (e.g., accountability).	2	1	2
-about learning/school (e.g., increased interest, involvement, enthusiasm, motivation).	3	3	3
Increased achievement			
-in mastery/retention of facts and skills.	1	1	4
-in problem-solving abilities.	0	0	2
-in grades.	0	1	1
-in test scores.	2	3	3
Benefitted from better instruction which provides			
-a structured, consistent format.	3	2	2
-a clear understanding of teacher expectations.	0	0	4
-effective learning activities (e.g., review, practice, homework).	0	0	3
-more individualized attention.	0	0	1
-opportunity for independent work.	0	1	0
-better use of time/more material covered.	0	3	2
-large group instruction.	0	0	1
-special benefits for slower students.	0	0	1

CO = Central Office; SA = School Administrators; T = Teachers

better instruction which provides a structured, consistent lesson format were the student impact categories mentioned by central office staff across the largest number of counties. All three role groups reported improved student attitudes or awareness about learning responsibilities and about learning/school in general, increased achievement in mastery/retention of facts and skills and in test scores, and benefits from better instruction which provides a structured, consistent lesson format.

Survey respondents in general felt that AT had somewhat of an impact on students in terms of better attitudes and achievement, with mean responses ranging from 3.59 to 3.88 on a scale from 1.00 (strongly disagree) to 5.00 (strongly agree). (See Table 14.) However, these responses were not as high as the responses given to classroom and teacher impact. Teachers were consistently lower in their ratings of student impact than were central office staff, except in their ratings of the statement that "students' achievement has increased" where teachers' ratings were fairly consistent with the ratings given by the other two role groups.

Affective measures of student impact were submitted by three of the seven LEAs. (Two additional LEAs submitted results from their own surveys of student attitudes toward AT.) Cecil and St. Mary's counties gave their students the Student Questionnaire. The questionnaire consists of seven questions or dimensions (i.e., recognition of differences, understanding of lessons, enjoyment of lessons, ease of lessons, learning of lessons, better grades, and better lessons). Respondents answered using a five-point scale ranging from 1.00 (not at all) to 5.00 (yes a lot). There are elementary and secondary versions of the questionnaire.

In Cecil County, both the elementary (grades K-3) and secondary (grades 4-12) versions of the questionnaire were administered at the end of AT implementation (post). As can be seen in Table 16, the mean scores for all seven dimensions were positive on both versions of the questionnaire. The mean scores of the younger students ranged from 3.13 (ease of lessons) to 4.68 (recognition of differences between AT lessons and lessons taught prior to AT implementation). The mean scores of the older students ranged from 3.71 (ease of lessons) to 4.50 (understanding of lessons).

In St. Mary's County, the secondary version of the questionnaire was given to students in 16 different classes taught by eight teachers half-way through the year (mid) and again at the end of the year (post). As can be seen in Table 16, mean scores on the mid-year administration of the questionnaire were positive for all seven dimensions and ranged from 3.20 (better grades) to 4.04 (understanding of lessons). Mean scores on the post test were also positive ranging from 3.36 (better grades) to 4.23 (understanding of lessons). Mean scores on the questionnaire increased (became more positive) between the mid-year and end-of-year administrations for all seven dimensions (especially for three dimensions: learning of lessons, ease of lessons, and better lessons).

Caroline County used the My Class Inventory (MC) to measure affective student impact. The inventory was given to approximately 524 elementary students prior to AT implementation (pre) and 573 elementary students after implementation (post).

Table 16

Student Attitudes (Student Questionnaire): Active Teaching, 1982-83

LEAs Dimensions	Cecil				St. Mary's	
	N=	$\overline{X}$-Post(K-3)	N=	$\overline{X}$-Post (4-12)	$\overline{X}$-Mid N=409	$\overline{X}$-Post N=422
1. Recognition of differences	37	4.68	831	3.83	3.83	3.91
2. Understanding of lessons	36	4.36	821	4.50	4.04	4.23
3. Enjoyment of lessons	36	4.08	816	3.91	3.78	3.88
4. Ease of lessons	37	3.13	802	3.71	3.23	3.49
5. Learning of lessons	37	4.46	800	4.22	3.63	3.93
6. Better grades	41	4.39	797	3.75	3.20	3.36
7. Better lessons	35	4.03	792	3.96	3.53	3.75

Mean responses range from 1.00 (not at all) to 5.00 (yes a lot). The higher the score, the higher the agreement with the dimension measured.

Table 17

Student Attitudes (My Class Inventory): Active Teaching, 1982-83

LEA / Dimensions	Caroline			
	Pre		Post	
	% Yes	% No	% Yes	% No
1. Competitiveness	75	25	70	30
2. Satisfaction	68	32	65	35
3. Difficulty	38	62	36	64
4. Friction	69	31	65	35

The MC is an elementary version of the Learning Environment Inventory. It consists of 45 items measuring five dimensions. Four dimensions were relevant for assessing AT impact on student attitudes (i.e., competitiveness, satisfaction, difficulty, and friction). Responses are "yes" and "no" and the higher the percent of "yes" answers, the higher the agreement with the dimension being measured. High agreement is desirable for satisfaction, and low agreement for difficulty and friction. Desirable scores on competitiveness depend upon individual school philosophies.

There was very little difference between scores on the pretest and posttest indicating that student attitudes about their classes did not change after AT implementation. On both the pretest and posttest, agreement was high for competitiveness, satisfaction, and friction and low for difficulty indicating that students liked to compete, enjoyed their classes, felt that there were tensions among certain groups of students that tended to interfere with class activities, and felt that the work of the class was not too difficult.

Garrett County administered its own attitude survey to students involved in AT. Results showed that AT students were more satisfied with instruction and had more positive attitudes about their class in comparison with a control group of students not using AT.

In Wicomico County, teachers were asked to complete a questionnaire after two and one-half months of AT implementation. They were asked to summarize their students' attitudes about AT. Some of the teachers' responses were: class likes it, students feel secure, students look forward to class, students are increasing their self confidence, and students like the routine.

Harford and Montgomery Counties did not submit affective data. However, both counties had received informal positive feedback about AT from students.

Cognitive measures of student impact were submitted by three of the seven LEAs: Garrett, Montgomery, and St. Mary's counties.*

Garrett County submitted pre and post mean scores on a criterion-referenced test for seven AT classes at Northern High School. For all seven classes, scores increased from pre to post and the differences between pre and post test mean scores ranged from 12.77 to 47.07 points.

At Southern High School, the pre and post test mean scores of three experimental and control groups were compared. For two of the three experimental/control groups comparisons, AT students (experimental) made substantially larger gains than non-AT students (control) between the pre and post test.

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* While CAT scores for the students in Belmont Elementary for October 1982 were submitted by Montgomery County, they are not discussed here since no related data (e.g., post scores, trend analysis) were provided.

St. Mary's County compared the mid-term and final grades of students in nine AT classes and two control classes. Thirty-eight percent of the experimental students' grades increased from mid-term to final grade compared to only 8% of the control group's grades. While 62% of the experimental students' grades dropped between mid-year and the end of the year, 92% of the control group's grades decreased.

Caroline and Wicomico counties were not required to submit cognitive data. Cecil County did not formally look at cognitive impact because AT had spread widely and it was too difficult to isolate students and teachers for placement in experimental and control groups.

No cognitive data were received from Harford County. Harford has conducted a longitudinal study with six schools (two schools scoring at each of three levels -- top, middle, low -- on the CAT) comparing third and fifth grade CAT scores in mathematics. There were significant gains on CAT scores at both the lower and middle scoring schools.

Direct "cause and effect" claims for AT impact on student achievement are difficult to make on the basis of the above data and test designs used. However, many students are mastering the material and believe that their comprehension and competence have improved, and this can be attributed in part to AT.

Participant Concerns

Two types of concerns were expressed by AT implementers: model-specific and implementation-process concerns. As can be seen in Chart 2, most implementers expressed model-specific concerns with the most common being that AT was too structured/monotonous and could inhibit a teacher's creativity. The most common implementation concern was that personnel and resources were not being used (or available) to meet project needs.

Chart 2

Concerns/Problems Reported: Active Teaching, 1982-83*

Model concerns

Time allocations too rigid/lack of time for students having problems (4)

Not applicable for all subject areas/classrooms (4)

Too structured/monotonous/inhibits a teacher's creativity (6)

Children checking & grading homework (which may not have been done independently) (2)

Does not take individual differences into account/may hold back academically talented students (1)

Implementation concerns

Coordination of effective activity, design, materials development, and classroom management (3)

Personnel and resources not used (or available) to meet project needs (5)

Teachers not actively engaging students in learning (1)

* Figures in parentheses indicate the number of LEAs making a given statement.

Suggested recommendations (see Chart 3) fell into four categories: classroom implementation, implementation/preparation, expansion, and external assistance. The most common recommendation was to expand to other classes/subjects/teachers/schools. However, many respondents stated that before expanding, LEAs should try to implement the other types of recommendations (i.e., implementation and external assistance).

Conclusions and Summary

In the preceding pages, each research question or issue has been addressed and findings have been discussed across LEAs. Some issues and conclusions are presented below. Then, findings for each LEA are discussed.

It is apparent that almost all LEAs implementing AT were strongly committed to its effective use in a large number of classrooms, and employed strategies both to train teachers and to ensure school-based administrators and central office staff could observe and supervise AT classes effectively. The level of fidelity was high, implementation was long term and consistent for given subjects and grades, and teachers understood the relative instructional value of components. Although seemingly simple, AT became a challenge when teachers understood the implications involved (especially coordinating activities, materials, and management strategies for each component to maintain time-on-task). Although AT was used in many subject areas, the greatest impact was made in mathematics.*

Impact was made on student achievement when AT was used in appropriate subjects or units, and when the teacher paced the students through the components at a level of instructional difficulty appropriate for the majority

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* AT was designed primarily for mathematics instruction. Also, the MSDE TA for AT is a mathematics specialist and can readily provide assistance in this area.

Chart 3

Recommendations/Solutions: Active Teaching, 1982-83*

Classroom implementation

- Allow situational adaptation (e.g., spotcheck, instead of full class checking) (3)
- Maintain fidelity (and monitor) (2)
- Allow sufficient time, adjust time allocations (3)
- Provide resources (material) (1)
- Have ability or homogenous grouping (2)
- Develop strategies to deal with absentees (1)

Implementation/preparation

- Implement for the full year (3)
- Reduce paper work (1)
- Provide training and assistance (e.g., by content areas) (3)
- Evaluate effectiveness (1)

Expansion

- Use every day (1)
- Expand to other classes/subjects/teachers/schools (6)
- Try another model (2)

External assistance

- Provide inservice (1)
- Keep locals informed about research on teacher effectiveness (1)
- Increase funding (1)
- Increase central office support (1)
- Increase cooperation between MSDE and central office to help teachers solve problems (1)

* Figures in parentheses indicate the number of LEAs making a given statement.

of the students. (This is difficult in heterogeneous classes with wide ranges of ability.) Students' attitudes about their ability to learn, and appreciation for well-organized lessons increased when AT was used with fidelity.

Impact was made on individual teachers' knowledge (research on classroom effectiveness and its relationship to AT) through training. Skills improved (in use of time, development of activities for the "review" component, and the coordinated management of learners and learning), through on-site practice accompanied by follow-up assistance. Self-confidence in their teaching ability increased when their efforts were acknowledged by administrators and supervisors.

Impact was made on a school (the faculty and how instructional matters are dealt with) when several teachers are involved, and when it was understood that AT was to be used for a given subject or unit. In elementary schools, it appeared to be important for principals to understand and advocate use of AT (e.g., for mathematics), and conduct observations related to AT components (providing appropriate recognition for success). In secondary schools, it appeared that the principals' understanding and advocacy was important in establishing the reality of implementation, but subsequently faculty looked to each other (e.g., by subject "teams") for interactive support. (This difference is less likely to be related specifically to AT than to the different organizational structures and teacher isolation of elementary and secondary schools.)

The strategies used to provide interactive support and maintain energy to implement or expand AT were as important as the perceived value of the model. Positive impact was made when teachers were given training and follow-up assistance that related to their expressed needs and interests; when administrators understood, advocated, and acknowledged fidelity implementation; when teachers had time and skill (with assistance if necessary) to coordinate and develop activities, materials, and management strategies to fit components and student needs; and when central office staff clearly and consistently communicated the nature and extent of their interest in the success of AT, acknowledging successes and taking action to help overcome problems encountered. Positive impact was reduced or barriers created when: central office staff maintained administrative control but expected everything else to be done by school-based staff; centralized mandates were made with insufficient attention to building commitment and a sense of ownership by school staff; the program was "energized" by one key person whose influence was limited (e.g., if he/she was reassigned, or was school-based), with the result that time and effort was then needed to build capacity and interest of others.

In the following case reports of the LEAs implementing AT, attention is given to the influential factors mentioned above and also to specific objectives and results achieved in each county.*

Caroline County. Caroline has been implementing AT for one year using a lighthouse school strategy. In September 1982, educators "hoped" to achieve five objectives specified in Table 8 (i.e., improving student achievement in basic skills, informing local educators about AT, training local educators to use AT, improving teachers' classroom competence, and improving time-on-task). In June 1983, four of the five objectives had been "partly achieved" (the exception was improving student achievement in basic skills which was no longer indicated as an objective in June). Two additional objectives not mentioned in September were also "partly achieved" (i.e., helping teachers become better organized and improving students' involvement in learning).

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* Levels of information vary, in part because two LEAs were pilot sites of which one invited RBS to visit, and in part because some LEAs provided more documentation or other evidence of model implementation and improving student involvement in learning.

- Scope and Intensity. After the first year of AT implementation (June 1983), AT was being used in two elementary schools by five teachers and 122 students in mathematics.

- Fidelity. Teachers consistently addressed all six components of the AT model. The largest number of teachers felt that the pre-lesson development was the AT component having the greatest impact on students.

- Time. Educators spent an average of 10 months involved in AT across the 1982-83 school year. Teachers reported spending an average of 29% of their school week on AT-related activities. AT required teachers to spend about the same amount of time preparing students (e.g., grouping, pre-testing) and allowed somewhat more time for curriculum coverage than had similar previous instructional methods.

  School administrators spent an average of seven days and central office staff an average of four and one-half days on AT. School administrators felt AT took "about the same" amount of time and energy, while central office reported "slightly less" effort on AT in comparison to similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least amount of time and energy on materials development (1.83)* and the most effort on inservices and evaluation (3.33 for each activity). School administrators spent the least amount of time on administration (1.75) and the most effort on inservices and evaluation (3.25 for each activity). Central office staff spent the least time on materials development (1.50) and the most effort on inservices, supporting school implementation, dissemination, and evaluation (3.50 for each activity).

  Training was done by MSDE, central office staff, and school-based staff (teachers and school administrators). Educators rated the interactive support received from the five role groups involved in SITIP as average and above. MSDE received the highest ratings and developers the lowest ratings of support. (Staff of this LEA had no interaction with AT developers.) By the beginning of June 1983, information had been received by all central office staff, 50% of the school administrators, and 25% of the teachers. Training had been received by 75% of the central office staff and school administrators and by 25% of the teachers. Twenty-five percent of the school administrators and teachers had received help.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. AT has had an impact on training and on the school system, the school, the educators, and the students involved. In the area of training, the majority of teachers felt that they understood the model.

  AT impact on the school system was the policy decision to actively encourage use of the model district-wide for elementary mathematics. School level impact included greater continuity/consistency of instruction for mathematics, teacher enthusiasm and sharing, and a structured daily program/ improved management system.

  School administrators felt that AT involvement enabled them to learn about a new teaching technique and to become better organized.

  Educators indicated that AT has had an impact at the classroom level in terms of a structured, consistent format.

  Teachers increased their knowledge of the components of effective teaching, improved their skills in a new teaching technique, in organization/ structure/planning/pacing, and in the effective use of time, and strengthened their confidence and self-image.

  Educators were unsure as to whether use of AT had resulted in increased student achievement during the first year of implementation. Affective student impact was perceived by educators in terms of improved attitudes about school, enjoyment of AT, and somewhat better/less disruptive behavior. Results from the My Class Inventory indicated that students in AT classes did not have difficulty with the lessons, were fairly satisfied, and reported slightly less competition and friction by the end of the year than they had first perceived.

- Concerns and Changes. Caroline educators expressed both model and implementation concerns. Some educators felt that the time allocations were too rigid, that the model was too structured and could inhibit a teacher's creativity, that the model may hold back academically talented students, that AT was not applicable for all subjects/classrooms, and that personnel and resources were either not being used or were not available to meet project needs.

  Suggested recommendations included developing strategies to deal with absentees, evaluating the effectiveness of the model, and expanding AT to other classes/subjects/teachers/ schools.

Factors influencing relative success included: 1) strong central office support; and 2)opportunity and willingness to learn from "veteran" AT implementers. Concerns expressed suggest that educators may need to explore use of resources and the extent to which teachers believe that their ideas and needs are considered for the project. Caroline has made good progress for its first year of implementation.

Cecil County. Cecil has been implementing AT for two years using a pilot district strategy. In September 1982, educators "hoped" to achieve seven of the nine objectives specified in Table 8 (i.e., improving student achievement in basic skills, informing local educators about the model, training local educators to use the model, improving teachers' classroom competence, helping teachers become better organized, improving time-on-task, and improving students' involvement in learning). In June 1983, two of these seven objectives had been "partly achieved" (i.e., improving teachers' classroom competence and improving students' involvement in learning). The remaining five objectives were "achieved."

- Scope and Intensity. After the first year of AT implementation (June 1982), AT was being used in four schools (2 elementary and 2 junior high/middle schools) by approximately 20 teachers and 450 students in reading/language arts and mathematics. In June 1983, 17 schools, 40 teachers, and 2,000 students were involved in AT.

- Fidelity. The only AT component not consistently addressed by all the teachers was weekly or monthly end of unit reviews. The largest number of teachers reported that controlled practice was the AT component having the greatest impact on students.

- Time. Educators spent an average of 8 months involved in AT across the 1982-83 school year. Teachers reported spending an average of 25% of their school week on AT-related activities.

  School administrators spent an average of 10 days and central office staff an average of 12 days on AT. School administrators reported that AT took "slightly less" time and energy and central office staff reported "slightly more" effort on AT in comparison to similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least amount of time and energy on dissemination (2.30)* and the most effort on supporting school implementation (3.30). Central office staff spent the least effort on materials development and dissemination (3.00 for each activity) and the most effort on inservice (5.00). School administrators spent the least time and energy on inservice (1.86) and the most effort on supporting school implementation (2.86).

  Most of the training was done by central office staff, although a few teachers were also trained by the developer, MSDE, and school-based staff (school administrators and teachers). Educators rated the interactive support received from the five role groups involved in SITIP as average and above. Central office staff received the highest ratings and developers the lowest ratings. By the beginning of June 1983, information had been received by 100% of the central office staff, and by about 75% of the school administrators and teachers. Training and help had been received by 100% of central office staff and school administrators and by about 50% of the teachers.

- Impact. AT has had an impact on training and on the school system, schools, educators, and students involved. In the area of training, the teachers reported that they understood the model. A large number of them felt that their teaching ability had improved as a result of their involvement in AT.

  AT impact on the school system included policy decisions to use AT in certain subjects/grades district-wide, and greater emphasis on staff development. School level impact included greater continuity/consistency within those subject areas and teachers using AT, teacher enthusiasm and sharing, and a structured daily program/improved management system.

  Central office staff felt that involvement in AT enabled them to learn about a new teaching technique. School administrators experienced the satisfaction of being part of a successful project, and became aware of an effective method of observation/supervision.

  Educators indicated that AT has had an impact at the classroom level in terms of a structured, consistent format, clear teacher expectations, the use of effective learning activities, more individualized attention, and better use of time.

  Teachers increased their knowledge of the components of effective teaching and improved their skills in organization, structure, planning, pacing, the effective use of time, the components of effective teaching, assessing and addressing student needs, and instruction in general. Teachers' confidence and sense of efficiency increased, as did their belief in the value of traditional teaching techniques.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Increased student achievement was perceived to some degree by educators in terms of grades and increased mastery/retention of facts and skills. Affective student impact was positive in terms of student enjoyment and better/less disruptive behavior.

- Participant Concerns. Educators expressed both model and implementation concerns. Some educators felt that AT is not applicable for all subject areas/classroom and that it can inhibit a teacher's creativity. They were concerned about children checking and grading homework which may not have been done independently. Teachers expressed a concern over the ability to coordinate effective activity design, materials development, and classroom management.

  Recommendations/solutions dealt with classroom implementation (i.e., allow sufficient time, provide resource materials, and group students by ability), implementation/preparation (i.e., implement for the whole year and provide continued training and assistance), and expansion (i.e., use everyday, expand to other classes/subjects/teachers/schools, and try another model).

Factors influencing relative success included: 1) strong central office support, particularly in training teachers and providing follow-up assistance; 2) involvement of school-based administrators in supervisory-support roles; and 3) teachers' professionalism. Educators may need to address concerns about homework and coordination of activities, materials, and management in the classroom. (The latter may be alleviated if ability grouping is used for AT mathematics.)

Garrett County. Garrett has been implementing AT for two years using a lighthouse school strategy. In September 1982 educators "hoped" to achieve all of the objectives specified in Table 8. In June 1983, these objectives were "partly achieved".

- Scope and Intensity. After the first year of AT implementation (June 1982), AT was being used in one high school by five teachers and 281 students in mathematics and science. In June 1983, eleven teachers and 443 students in two high schools were using AT in a variety of subjects.

- Fidelity. None of the six AT components were addressed by all the teachers. However, no component was addressed by less than 78% of the teachers. The two components least addressed were controlled/guided practice and homework assignments. The largest number of teachers reported that the independent practice was the AT component having the greatest impact on students.

- Time. Educators spent an average of seven months involved in AT across the 1982-83 school year. Teachers reported spending an average of 31% of their school week on AT related activities.

  School administrators spent an average of three days and central office staff an average of 20 days on AT. Central office staff reported that AT took "slightly less" time and energy and school administrators reported "about the same" effort in comparison to similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least amount of time and energy on materials development (2.50)* and the most effort on administration (4.00). School administrators spent the least effort on materials development (1.50) and the most time and energy on administration, inservice, and supporting school implementation (3.00 for each activity). Central office staff spent the most effort on administration (5.00) and the least time on materials development (3.50).

  Most of the training was done by MSDE, although some of the teachers also received training from the developer, central office staff, and school administrators and teachers. Educators rated the interactive support received from the five role groups involved in SITIP as average and above. Central office received the highest and developers the lowest ratings of support. By the beginning of June 1983, information had been received by 50% of the central office staff, 75% of the school administrators and 100% of other faculty at the two high schools using AT. Training had been received by 50% of the central office staff, and 75% of the school administrators and 25% of the teachers at the pilot schools had received training and help.

- Impact. AT has had an impact on training and on the school system, schools, educators, and students involved. In the area of training, 89% of the teachers reported that they understood the model and 33% reported that their teaching ability had improved as a result of their involvement in AT.

  As a result of SITIP, the school system became more aware of the research on school improvement and effective teaching.

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* Level of effort (time and energy was rated on a scale from 0 (none) to 5.00 (a great deal).

School level impact was felt in terms of closer monitoring/supervision of lessons by principals and supervisors.

Central office staff reported that AT enabled them to become better organized, and school administrators reported that AT strengthened their conviction that traditional instruction works.

Classroom level impact (e.g., AT is a worthwhile, workable instructional model) was perceived by educators in terms of a structured, consistent format, clear teacher expectations, and the use of effective learning activities.

Teachers increased their knowledge of the components of effective teaching and improved their skills in a new teaching technique; in organization, structure, planning, and pacing; in the effective use of time; in the components of effective teaching; in assessing and addressing student needs;and in instruction in general. Teachers also strengthened their convictions about the benefits of traditional teaching techniques.

Increased student achievement was perceived in terms of mastery/retention of facts and skills and evidenced in results from teacher made tests. At one school, two out of three AT classes made greater gains on tests than did control classes. At the other school, pre to post gains for AT classes ranged from 12.77% to 44.77%, with all class means above 53% on the post test. (Local evaluators stated "Greatest learning gain appears to correlate with degree of implementation of the model's major components," and "Students identified more organized instruction as the major contributor to increased student learning.")

Affective student impact was perceived in terms of improved attitudes about learning responsibilities. AT students reported satisfaction with instruction, increased self confidence, belief that they were learning more, and belief that more content was being taught. For the 1982-83 year, between 50% and 83% of the AT students in both schools agreed in those four areas, (with a higher mean score in the second-year site), while between 31% and 68% of the control students made such responses. (Local evaluators concluded "Experimental students ... were more satisfied with instruction than were their control counter parts.")

- Participant Concerns. Educators expressed concerns that AT is not applicable for all subject areas/classrooms, and that AT is so structured it can inhibit a teacher's creativity. In the area of implementation, educators were concerned about personnel and resources not being used (or available) to meet project needs.

> Suggested recommendations fell into four categories: classroom implementation (i.e., allow instructional adaptation); implementation/preparation (i.e., implement for the full year); expansion (i.e., expand to other classes/subjects/teachers/schools); and external assistance (i.e., provide inservice).

Factors influencing relative success included: 1) the relationship of AT to existing beliefs of many local educators about effective teaching (reinforcing commitment); 2) staff reassignments (e.g., the "loss" of the school-based coordinator) which made heavy demands on the MSDE TA to provide training for expansion and assistance for capacity building; and 3) central office responsiveness to MSDE assistance, and support for the project, including investment in evaluation to determine the objective value of AT. The recommendations made in the local evaluation report include "... support continued use of the model on a voluntary basis," and "perhaps it (the model) can be adapted more easily to some content areas ... than to others." Local educators may also want to review their allocation of staff and time related to AT in light of these concerns and in order to increase their own capacity for training and assistance in support of implementation.

Harford County. Harford has been implementing AT for two years using a district-wide strategy. In September 1982, educators "hoped" to improve teachers' classroom competence and had "partly achieved" improvement in student achievement in mathematics. In June 1983, improving student achievement remained "partly achieved" and improving teachers' classroom competence was "achieved", especially at the elementary level.

- Scope and Intensity. After the first year of implementation (June 1982), AT was being used in all (26) elementary schools by 434 teachers and 11,910 students in mathematics. By June 1983, all of the middle schools were also using AT: a total of 34 schools, 446 teachers and 19,177 students in mathematics, grades K-8.

- Fidelity. The majority of teachers implemented AT with a high degree of fidelity using all six components.

- Time. Educators spent an average of eight months involved in AT across the 1982-83 school year. Teachers reported spending an average of 51% of their school week on AT-related activities. (Middle school subject specialists spent much more time on AT than did elementary teachers.) Educators did not think that AT required more time for preparing students (e.g., grouping, pre-testing) and were unsure about whether the curriculum could be covered in a shorter amount of time using AT.

  Central office staff spent an average of 23 days on AT. They reported that AT took about the same amount of time and energy as had similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least amount of time and energy (level of effort) on evaluation (2.43)* and the most effort on inservice (3.57). Central office staff spent the most effort on administration, materials development (for training), and inservice (4.33 for each activity) and the least effort on evaluation (3.67). School administrators spent the least time on administration (.67) and the most effort inservice (3.00).

  Most of the training was done by central office staff and some by school administrators and the MSDE TA. Educators rated the interactive support of the five role groups involved in AT as average and above. Central office staff received the highest ratings and MSDE the lowest ratings. MSDE trained and provided assistance to central office staff and received high ratings of support from this role group. By the beginning of June 1983, all educators in grades K-8 had received information, training, and help.

- Impact. AT has had an impact on the school system, schools, educators, and students involved. The school system has benefitted by the improved communication, sharing, and cooperation among educators across the district. Children are grouped by ability to facilitate AT implementation. At the school level there has been closer monitoring/supervision of lessons by principals and supervisors, and a better definition of student and teacher roles.

  Central office staff and school administrators felt that AT gave them a means of helping ineffective teachers.

  Educators indicated that AT has had an impact at the classroom level in terms of more opportunity for independent work and better use of time/more material covered.

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* Levels of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Teachers increased their knowledge of the components of effective teaching and improved their skills in a new teaching technique; in organization, structure, planning, and pacing; in the effective use of time; in the components of effective teaching; in assessing and addressing student needs; and in instruction in general.

Increased student achievement was perceived by educators in terms of test scores. A longitudinal study showed significant gains on third and fifth grade CAT scores, especially for students attending schools that traditionally have low scores.

Affective student impact has been felt in terms of better/less disruptive behavior and improved attitudes about school.

- Participant Concerns. Some concerns expressed by educators included the following:

  - time allocations are too rigid
  - AT is too structured, can inhibit a teacher's creativity
  - children checking their own homework (which may not have been done independently)
  - personnel and resources are not used (or available) to meet project needs
  - some of the teachers may not be actively engaging students in learning.

  Recommended changes fell into two categories: classroom implementation (i.e., allow situational adaptation, maintain and monitor fidelity, allow sufficient time) and expansion (i.e., expand to other classes/subjects/ teachers/schools).

Factors influencing relative success included: 1) very strong central office support, particularly in providing training and follow-up assistance (although a little more attention to school administrators in the middle schools would have helped to overcome initial resistance); 2) use of various sources of information on school and classroom effectiveness to reinforce AT, especially among administrative staff, and 3) attention (by central office staff and school administrators) to assessing the subjective and objective value of AT and making appropriate data-based decisions (e.g., to address teachers' concerns) and claims (e.g., that AT works best when students are grouped by ability, and can make great impact on low-achieving students). Toward the end of the school year, budget cuts were made and a new project coordinator was assigned.

Montgomery County.* Montgomery has been implementing AT for two years using a lighthouse school strategy. In September 1982, educators had "achieved" improvement of student achievement in the basic skills and had "partly achieved" six other objectives specified in Table 8 (i.e., improving student achievement in other subjects, improving teachers' classroom competence, ensuring curriculum alignment, helping teachers become better organized, improving time-on-task, and improving students' involvement in learning). By June 1983, all of these six "partly achieved" objectives were "achieved" along with the additional objective -- informing local educators about AT.

- Scope and Intensity. By June 1983, AT was being used in one elementary school by five teachers and 180 students in reading/language arts and mathematics. In June 1983, four more teachers in the same school were using AT. These teachers are also implementing Teaching Variables.

- Fidelity. The two AT components that were not consistently addressed by all of the teachers were pre-lesson and lesson development.

- Time. Educators spent an average of nine months involved in AT across the 1982-83 school year. Teachers reported spending an average of 38% of their school week on SITIP-related activities (AT and TV). Educators were unsure as to whether AT required more time for preparing students (e.g., grouping students, pre-testing) or if curriculum could be covered in a shorter period of time using AT.

  Central office staff spent an average of 20 days on SITIP.** Central office staff and school administrators reported that SITIP took "substantially more" time and energy than had similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least amount of time and energy on materials development and dissemination (1.50 for each activity)* and the most effort on administration and supporting school implementation (4.00 for each activity). School administrators spent the least time and energy on dissemination (2.00) and the most effort on administration, inservice, supporting school implementation, and evaluation (4.00 for each activity). Central office staff spent no time on materials development and the most time and energy on administration and supporting school implementation (4.00 for each activity).

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* This school site combined use of AT and TV. Results cannot be attributed to the implementation of a single model.

** Central office staff were involved with more than one model.

Most of the training was done by school administrators and teachers, although some teachers received training from the developer and MSDE. Educators rated the interactive support received from the five role groups involved in SITIP as average and above (with the exception of support from central office staff). Teachers and school administrators received the highest and central office staff the lowest ratings of support. By the beginning of June 1983, at the pilot site, information and training had been received by all school administrators and teachers and by 10% of central office staff and other faculty. Help had been received by all school administrators, 50% of the teachers, and 10% of other faculty at the pilot site.

- Impact. AT has had an impact on training and on the educators and students involved. In the area of training, teachers felt they understood the model.

  School administrators felt that their involvement in AT enabled them to learn about a new teaching technique and to experience the satisfaction of being part of a successful project.

  Educators indicated that AT has had an impact at the classroom level (e.g., AT is a worthwhile, workable instructional model).

  Teachers have increased their knowledge of and skills in applying the components of effective teaching and have also improved their skills in assessing and addressing student needs.

  Increased student achievement has been perceived by educators in terms of test scores. Affective student impact has been felt in terms of enjoyment of the model and improved student attitudes about school.

- Participant Concerns. Educators expressed a concern that time allocations were often too rigid. They recommended that funding and central office support should be increased.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Factors influencing relative success included: 1) the energy and commitment of the principal, 2) the teachers' professionalism, and 3) use of various sources of information on school and classroom effectiveness to reinforce AT. This project was essentially school-based, and staff felt little relationship to other "school effectiveness" activities initiated by central office staff, in spite of "spin off" activities organized by the principal for professional groups in the county. Stated objectives were achieved and so participants experienced success from a rational perspective. However, they were disappointed by a perceived lack of active involvement by central office staff.

St. Mary's County. St. Mary's has been implementing AT for two years using a capacity building strategy. In September 1982, educators "hoped" to achieve four objectives specified in Table 8 (i.e., improving student achievement in basic skills and in other subjects, improving time-on-task, and improving students' involvement in learning). Four objectives were "partly achieved" (i.e., informing local educators about the model, training educators to use the model, improving teachers' classroom competence, and helping teachers become better organized). In June 1983, two objectives were still "hoped" for (i.e., improving student achievement in basic skills and in other subjects). The other six objectives were "partly achieved."

- Scope and Intensity. After the first year of implementation (June 1982), AT was being used in one high school by nine teachers in a variety of subjects. In June 1983, AT was in five schools (elementary and secondary). Twenty-seven teachers were using AT in various subject areas.

- Fidelity. The AT component addressed by the largest percentage of teachers (87%) was lesson development. Controlled/guided practice was addressed by the fewest number of teachers (67%). The remaining four components were addressed by at least 73% of the teachers. The largest number of teachers reported that pre-lesson development was the component having the greatest impact on students.

- Time. Educators spent an average of seven months involved in AT across the 1982-83 school year. Teachers reported spending an average of 63% of their school week on AT-related activities. AT required teachers to spend more time preparing students (e.g., grouping, pre-testing) in comparison to other instructional processes.

  School administrators spent an average of two days and central office staff an average of four days on AT. School administrators reported that AT took about the same amount of time and energy, while central office staff reported spending less effort on AT in comparison to similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least time and energy on materials development (1.44)* and the most effort on dissemination (2.78). School administrators spent the least time on materials development (2.00) and the most effort on supporting school implementation (3.00). Central office staff spent the least effort on materials development (1.17) and the most time and energy on dissemination (2.83).

  Most of the training was done by school-based staff (school administrators and teachers). The two teacher coordinators for the project have done the majority of the training. A "buddy" system is used for coaching. Educators rated the interactive support received from the five role groups involved in SITIP as average and above. Central office staff received the lowest ratings and teachers the highest ratings of support. By the beginning of June 1983, information had been received by all central office staff and school administrators and by 50% of the teachers. Training had been received by 50% of the central office staff. Twenty-five percent of the teachers at the pilot schools had received training and help.

- Impact. AT has had an impact on training and on the school system, schools, educators and students involved. In the area of training, 62% of the teachers reported that they understood the model, and 81% felt that their teaching ability had improved as a result of their involvement with AT.

  The school system benefitted from the improved communication, sharing, and cooperation among educators across the district. AT impact on the schools included greater continuity/consistency within those subject areas and teachers using AT, creased awareness of school needs, adoption of a uniform homework policy, and grass-roots expansion into other subject areas.

  Central office staff reported that AT involvement enabled them to gain experience in a new teaching technique, made them better organized, and allowed them to become more involved with students. School administrators felt that AT enabled them to learn about a new teaching technique and to become aware of an effective method of observation/supervision.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Educators indicated that AT has had an impact at the classroom level in terms of a structured, consistent format, a clear understanding of teacher expectations, better use of time, and the use of effective learning activities.

Teachers increased their knowledge of the components of effective teaching and improved their skills in a new teaching technique; in organization, structure, planning, and pacing; in the effective use of time; in assessing and addressing student needs; and in instruction in general. Teachers strengthened their belief in large group instruction.

Increased student achievement was evidenced in terms of increased mastery/retention of facts and skills, increased problem-solving abilities, and in test scores. Results of teacher-made criterion-referenced tests indicated that a larger percentage of students in AT classes than in control classes made achievement gains between the first and second semesters.

Affective student impact was felt in terms of improved attitudes about their learning ability and about school in general. Behavior was better/less disruptive. Questionnaire results (for over 400 high school students) showed improvement in all areas addressed, with greatest increases relating to students' perceptions of "learning more than usual," "finding the lessons easier," and "finding the lessons better than usual."

- Participant Concerns. Educators expressed the following concerns about AT: not applicable for all subjects/classrooms; too structured and can inhibit a teacher's creativity; difficulty in coordinating effective activity design, materials development and classroom management; and personnel and resources not used (or available) to meet project needs.

  Suggested recommendations fell into the categories of classroom implementation (i.e., allow situational adaptation), implementation/ preparation (i.e., provide training and assistance), expansion (i.e., expand to other classes/subjects/ teachers/schools, try another model),and external assistance (i.e., keep local staff informed about research on teacher effectiveness, increase cooperation between MSDE and central office to help teachers solve problems).

Factors influencing relative success included: 1) energy and enthusiasm of teacher coordinators who were AT advocates and built up the project, 2) administrative support and perseverance in encouraging voluntary involvement in other schools, 3) use of various sources of information on school and classroom effectiveness to reinforce AT, especially among administrative staff, and 4) development of strategies to facilitate implementation, e.g., follow-up assistance by "buddy" partners. Educators may wish to review the relative effectiveness of AT by subject area and/or teacher in light of concerns expressed and fidelity reported. Also, if expansion continues there will be continued need for assistance and support to teachers (probably most related to appropriate coordination and development of activities, materials, and management strategies). Given results to date, investment for review and support would probably be well worthwhile.

Wicomico County. Wicomico has been implementing AT for one year using a district-wide strategy. At the end of the first year of implementation (June 1983), educators "hoped" for improvement in student achievement in non-basic skills subjects and had "achieved" the objective of informing local educators about the model. The remaining seven objectives specified in Table 8 were "partly achieved."

- Scope and Intensity. In June 1983, AT was being implemented in 12 elementary schools by 43 teachers with 1,100 students in mathematics.

- Fidelity. All teachers consistently addressed all components except independent practice which was not addressed by 8% of the teachers. The largest number of teachers reported that pre-lesson development and controlled practice were the AT components having the greatest impact on students.

- Time. Educators spent an average of eight months involved in AT across the 1982-83 school year. Teachers reported spending an average of 24% of their school week on AT-related activities.

  School administrators spent an average of three days on AT. They reported that AT took less time and energy to imple- ment in comparison to similar previous projects.

- Roles and Responsibilities. School administrators spent the least time and energy on dissemination (.67)* and the most effort on supporting school implementation (3.00).

  Most of the training was done by MSDE and central office staff although some teachers received training from school-based staff (school administrators and teachers). Educators rated the interactive support received from the five role groups involved in AT as average and above. Developers received the lowest and central office staff the highest ratings of support. (Staff of this LEA did not interact with the developer.) By the beginning of June 1983, information had been received by all educators. Training and help had been received by all central office staff and school administrators and by 25% of the teachers in the county.

- Impact. AT has had an impact on training and on the system, schools, educators, and students involved. In the area of training, the majority of the teachers reported that they understood the model, and that their teaching ability had improved as a result of their involvement with AT.

  At the system level, a decision was made to increase allocated time from 45 minutes to 60 minutes a day for elementary mathematics classes. (This was recommended by some teachers as well as administrators.) The impact of AT on individual schools included greater continuity/consistency within those subject areas and teachers using AT and teacher enthusiasm and sharing.

  School administrators reported that AT enabled them to become better organized and to share ideas with teachers. This strengthened their conviction that traditional instruction works.

  Educators indicated that AT has had an impact at the classroom level in terms of better usage of time and emphasis on large group instruction.

  Teachers increased their knowledge of the components of effective teaching, and improved their skills in a new teaching technique; in organization, structure, planning, and pacing; in the effective use of time; in the components of effective teaching; in assessing and addressing student needs; and in instruction in general. They strengthened their belief that teachers must really teach every day, strengthened their attitudes about the value of specific components of effective teaching, and became more self confident as a result of AT.

  Increased student achievement was evidenced in increased mastery/retention of facts and skills, and increased problem solving abilities indicated by results of teacher-made tests.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Students enjoyed using AT and their behavior was better/less disruptive. Students also improved their attitudes about their learning capabilities and responsibilities and about school in general.

- Participant Concerns. Educators expressed the following concerns about AT: time allocations too rigid; too structured/inhibits a teacher's creativity. Coordinating effective activity design, materials development, and classroom management was found to be difficult and personnel and resources were not being used (or available) to meet project needs.

  Recommendations fell into the categories of classroom implementation (i.e., maintain and monitor fidelity, allow sufficient time for components, and have ability grouping), implementation/preparation (i.e., implement for the full year, reduce paper work, and provide training and assistance), and expansion (i.e., expand to other classes/subjects/teachers/schools).

Factors influencing relative success included: 1) strong central office support with active involvement of all elementary supervisors, and appropriate training and assistance provided by the project coordinator (with MSDE help), 2) informed support by principals, 3) professionalism and enthusiasm of teachers, and 4) opportunity and willingness to learn from "veteran" LEAs. Educators may want to address concerns relating to use of time (for specific components), to coordination and development of activities, materials, and effective management strategies, and to explore ways to maintain interest and energy. (Given the high degree of fidelity and competence of some of the AT teachers, those issues might well be addressed in teacher-led problem-solving sessions.) Wicomico is making very good progress, and appears to be applying appropriate strategies of planned change to facilitate AT implementation.

Mastery Learning (ML)

As stated in Chapter II, Mastery Learning (ML) is an instructional model which combines curriculum alignment (of sequenced skills, systematic instruction, and tests using items addressing both lower order and higher order thinking skills) with a philosophy that all students can achieve. A critical characteristic is formative, "no fault" testing followed by appropriate corrective or enrichment activities. Final summative tests for each unit are given, and student mastery of specified objectives is recorded. Usually a school establishes a standard of at least 80% of students achieving mastery of at least 80% of a unit's objectives. ML is most often used for structured academic subjects.

During 1981-82, six LEAs (Allegany, Anne Arundel, Baltimore City, Baltimore County, Howard, and Worcester) implemented ML. In 1982-83, one additional county (Carroll) became involved in ML. This section describes the implementation of ML including: planning; scope and intensity of implementation; time spent on implementing ML; roles and responsibilities of ML implementers; ML impact on school systems, individual schools, educators, and students; and participant concerns. First, results across sites are discussed. Then, county profiles are presented.

Planning

The extent of involvement of ML implementers in MSDE-organized planning activities during the 1981-82 school year is summarized below:

> Overall, all LEAs involved cross-hierarchical teams in at least...two planning activities.... School administrators were more heavily involved in planning than central office staff and teachers. Central office staff were more heavily involved in planning than were teachers.... (Roberts et al., 1982)

For the 1982-83 school year, MSDE did not organize any group planning activities but provided individual assistance in preparing PEPPS proposals to the "new" LEAs. None of the veteran ML LEAs changed their original plans.

An analysis of local plans for the 1982-83 school year identified LEA objectives and the status of each at the beginning of September 1982.* Table 18 presents the objectives. In each case, the percent of LEAs that "hoped for," "partly achieved," or "already achieved" each objective is indicated.

As can be seen in Table 18, there were nine objectives identified. All nine were addressed by at least five of the six "veteran" LEAs. Improving student achievement in basic skills; insuring a match between instruction, curriculum, and tests; helping teachers become better organized; and improving students' involvement in learning were objectives already achieved by some of the LEAs as of September 1982. The remaining five objectives were either "hoped for" or "partly achieved" by the LEAs addressing those objectives.

Scope and Intensity of Implementation

In September 1982, seven LEAs were involved in ML but Carroll was just beginning its involvement. Allegany, Anne Arundel, Baltimore City, Baltimore County, Howard, and Worcester were in their second year of implementation. As can be seen in Table 19, in June 1982 scope and intensity varied among the six "veteran" LEAs from three mathematics teachers and approximately 80 students in one elementary school in one LEA to 40 teachers in one high school teaching a variety of subject areas in another LEA. Across the six LEAs, approximately 6 schools and 78 teachers in a variety of subject areas were involved in ML.

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* New LEAs were not required to submit information on the status of their objectives in September 1982.

Table 18

Status of Local Objectives, 1982-83: Mastery Learning

Local Objectives	Status							
	Pre-(Sept. 1982)				Post-(June 1983)			
		Percent of LEAs				Percent of LEAs		
	N	1*	2*	3*	N	1*	2*	3*
1. Improve student achievement (basic skills).	6	0	67	33	7	14	43	43
2. Improve student achievement (other subjects).	5	60	40	0	6	67	33	0
3. Inform local educators about model.	6	83	17	0	7	14	29	57
4. Train educators to use model.	6	33	67	0	7	0	71	29
5. Improve teachers' classroom competence.	6	33	67	0	7	0	71	29
6. Ensure match of instruction, curriculum, and test(s).	6	33	50	17	7	0	43	57
7. Help teachers become better organized.	6	33	50	17	7	0	71	29
8. Improve time-on-task.	6	33	67	0	7	0	71	29
9. Improve students' involvement in learning (motivation).	5	20	60	20	5	0	60	40

*1 = Hoped for
2 = Partly achieved
3 = Achieved

Note. Total number of LEAs equals 7.

Table 19

Scope and Intensity, June 1982: Mastery Learning

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Allegany	LS	1	O	25	300	R/LA, M, SS, O
Anne Arundel	LS	1	H	3	100	Sc
Baltimore City	PD	1	H	40	-	R/LA, M, Sc, SS, O
Baltimore County	LS	1	E	3	80	M
Carroll	New District					
Howard	LS	1	J/M	2	-	R/LA, SS
Worcester	LS	1	E	5	100	M

Subject Areas:
R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social Studies
O=Other

Type:
E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

Strategy:
LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Table 20 presents the scope and intensity of ML implementation in June 1983. Across the seven LEAs, two implementation strategies were being used (lighthouse school = 6; pilot district = 1). Approximately 203 teachers in 13 elementary and secondary schools were implementing ML. The majority of LEAs were using ML in mathematics. However, several LEAs were also using ML in reading/language arts, science, and social studies. Two LEAs tried ML in other subject areas in addition to the four areas mentioned above.

The percentage of schools in each LEA implementing ML as of June 1983 ranged from nearly 1% in Anne Arundel County to 8% in Worcester County. Across the entire state, 1% of the schools were involved in ML at the end of the 1982-83 school year.

Some changes occurred between June 1982 and June 1983, the most obvious being in the one "new" LEA. Carroll decided to use a lighthouse school approach in one junior high/middle school with two teachers in social studies.

In general, the scope and intensity of implementation in the six "veteran" LEAs increased between June 1982 and June 1983. None of the six districts changed their implementation strategies. Two LEAs increased in number of schools. There were increases in the number of teachers implementing the model in three LEAs, and slight decreases in two LEAs. Number of students involved increased in four LEAs and decreased in one LEA. Subject areas were increased in two LEAs.

Scope and intensity also includes fidelity -- the extent to which teachers implement the model as designed. ML, as designed, requires the implementation of 10 components or processes which are listed below:

1. Objectives are specified.
2. Objectives are broken down into component skills.
3. Curricula are matched to objectives.
4. Instruction given matches curricula and objectives.
5. Tests match objectives.

Table 20

Scope and Intensity, June 1983: Mastery Learning

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Allegany	LS	1	O	22	300	R/LA, M, Sc, SS, O
Anne Arundel	LS	1	H	3	150	Sc
Baltimore City	PD	5	J/M, H	150	3,332	R/LA, M, Sc, SS, O
Baltimore County	LS	3	E	13	325	M
Carroll	LS	1	J/M	2	161	SS
Howard	LS	1	J/M	9	260	R/LA, M, Sc, SS
Worcester	LS	1	E	4	75	M

Subject Areas: R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social Studies
O=Other

Strategy: LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Type: E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

6. Tests include both higher and lower order thinking skills.
7. A no-fault formative test is given for each unit.
8. Corrective and enrichment activities are given after the formative test.
9. Summative tests are given after each unit.
10. Records are kept per class/student/objective on level of mastery.

Of the 48 teachers responding to the General Survey, 23% carried out all 10 processes. No process was addressed by less than 52% of the teachers. Processes most consistently addressed were: corrective and enrichment activities and summative tests (each by 98% of the teachers), and matching tests to objectives (by 96% of the teachers). The process least addressed by teachers was record-keeping (52%). The remaining six component components were addressed by at least 73% of the teachers. The greatest fidelity was maintained in Anne Arundel and Carroll counties (both small in scope and intensity of implementation, each with one school, and each with less than four teachers in one subject area). Greatest adaptation occurred in Allegany County (where there was a great range of subject areas and grades). Baltimore City, which had the greatest scope and intensity of implementation, had a high level of fidelity. In general, fidelity across all of the LEAs was high. Teachers indicated that the most important components of ML (in terms of instructional value) were the formative and summative tests that provided students a second chance to gain mastery. The largest number of teachers defined mastery as 80% of the students achieving 80% or better on summative tests. This is in keeping with the developer's recommendation.

Time Spent on the Model*

This section discusses time spent on ML during the 1982-83 school year. Time across the school year is discussed first, followed by a discussion of the time spent by teachers and by school and central office administrators.

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* This information is based on the responses made by a sample of implementers who completed the General Survey.

Across the school year. ML implementation across the 1981-82 school year is summarized below:

> All counties had started using ML in the classroom by February 1982. The majority of respondents began implementation in October 1981. Some teachers from each county except Howard were using ML in May and June 1982. The majority of respondents ended implementation in June. Teachers in Baltimore County and Worcester began using ML in the classroom in September and continued until June. Teachers in Anne Arundel started implementing in January and ended in June. Howard County used ML in the classroom during February and March. Teachers from Allegany began implementing between October and February and terminated implementation anywhere between December and June. Starting and ending dates for Baltimore City implementation ranged from September to May. (Roberts et al., 1982)

During the 1982-83 school year, implementers across the seven LEAs were involved in SITIP for an average of eight months, with all investing at least 6 months. Baltimore City had the lowest and Anne Arundel had the highest average number of months of involvement.

In the classroom. Time spent by teachers in the classroom implementing ML during the 1981-82 school year is summarized below:

> Once implementation began, the majority of teachers used ML 100% of the time allocated for the selected subject during the implementation period. However, the implementation period varied from one LEA to another. Teachers from Baltimore County and Worcester used ML to teach all units in the designated subject area for the entire school year. Anne Arundel teachers used ML to teach all biology units between January and June. Teachers in Allegany taught one unit using ML during the first semester and two units during the second semester. The Baltimore City goal was for each discipline to use ML to teach at least three units by the end of the school year: in general, teachers completed two units each. In Howard County two teachers used ML to teach one unit during the 1981-82 school year. (Roberts et al., 1982)

In 1982-83, the teachers responding to the General Survey (N=39) indicated that they spent an average of 31% of their school week on ML-related activities. The primary activity for the majority of teachers was classroom implementation. However, most teachers also spent time on planning and/or training. Elementary teachers using ML in one or two subject areas spent an average of 23% of their school week on ML. Secondary teachers using ML in their specific subject areas spent a larger percentage (37%) of their school week involved in ML. While each teacher spent approximately a third of his or her time on ML, only in four LEAs (Allegany, Anne Arundel, Baltimore County, and Worcester) did students in a given grade and subject area have ML as the instructional method for a complete course.

In general, local educators indicated that ML required teachers to spend more time preparing students (e.g., grouping, pre-testing), and did not allow the teacher to cover curriculum in less time. However, school administrators were less sure about curriculum coverage than were the teachers and central office staff. These results were similar to how educators felt during the 1981-82 school year. Teachers implementing ML in 1981-82 felt that although less curriculum may have been covered, the curriculum that was covered was taught more thoroughly and was retained by more students.

School and central office administrators.* Twenty-four school administrators and central office staff across the seven LEAs spent an average of 23 days on SITIP. The average number of days ranged from seven in Allegany and Carroll to 57 in Baltimore City. In general, central office staff spent more time on SITIP (33 days) than did school administrators (13 days).

Twenty-five central office staff and school administrators reported spending about the same amount of time and energy on SITIP as they had on similar previous projects. However, in Anne Arundel and Howard counties, the school administrators felt that they had spent "slightly more" to

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* Central office staff in Baltimore and Worcester counties were involved with two models. No data were available from school administrators in Carroll County.

"substantially more" time and energy on SITIP, while the central office staff in those counties felt that "substantially less" time and energy had been spent. Administrators in Carroll County reported spending the least amount of time and energy (2.00 on a scale from 1.00 "substantially less" to 5.00 "substantially more") while administrators from Worcester reported spending the most amount of time (3.75).

Roles and Responsibilities

The SITIP design encourages involvement of a cross-hierarchical team, including: 1) central office staff, e.g., supervisors in instruction or coordinators of staff development; 2) school administrators, e.g., principals, vice principals, or department heads; and 3) classroom teachers. This section describes the people involved, what they did, and their relationship to each other from three perspectives: usual assigned roles, activities undertaken and level of effort, and interactive support.

Usual roles. Teachers, school-based administrators, and central office staff were involved in ML. Of the 15 central office staff responding to the 1983 General Survey, one was in staff development, four were in instruction, two were in research and evaluation, and two were in "other" areas. Six had multiple responsibilities. Of the 12 school administrators responding to the survey, 9 were principals (2 elementary, 2 junior high/middle, 2 high school, 1 other, and 2 no grade level indicated) and three were vice principals (2 elementary and one junior high/middle). Most of the teachers implementing ML were at the secondary level.

Activities and level of effort. On the General Survey, six activity areas were identified and central office staff and school administrators (N=26) were asked to indicate level of effort (time and energy) spent on each (with responses ranging from 0 "none" to 5 "a great deal") for ML. The areas of activity were: 1) administration (including planning and budgeting); 2) development of materials; 3) designing and/or conducting inservice; 4) supporting school implementation (e.g., problem-solving, supplying materials, etc.); 5) dissemination; and 6) evaluation. (Mean ratings are presented in Table 21.)

The level of effort spent by central office staff and school administrators on each activity area during the first year of implementation (1981-82) is summarized below:

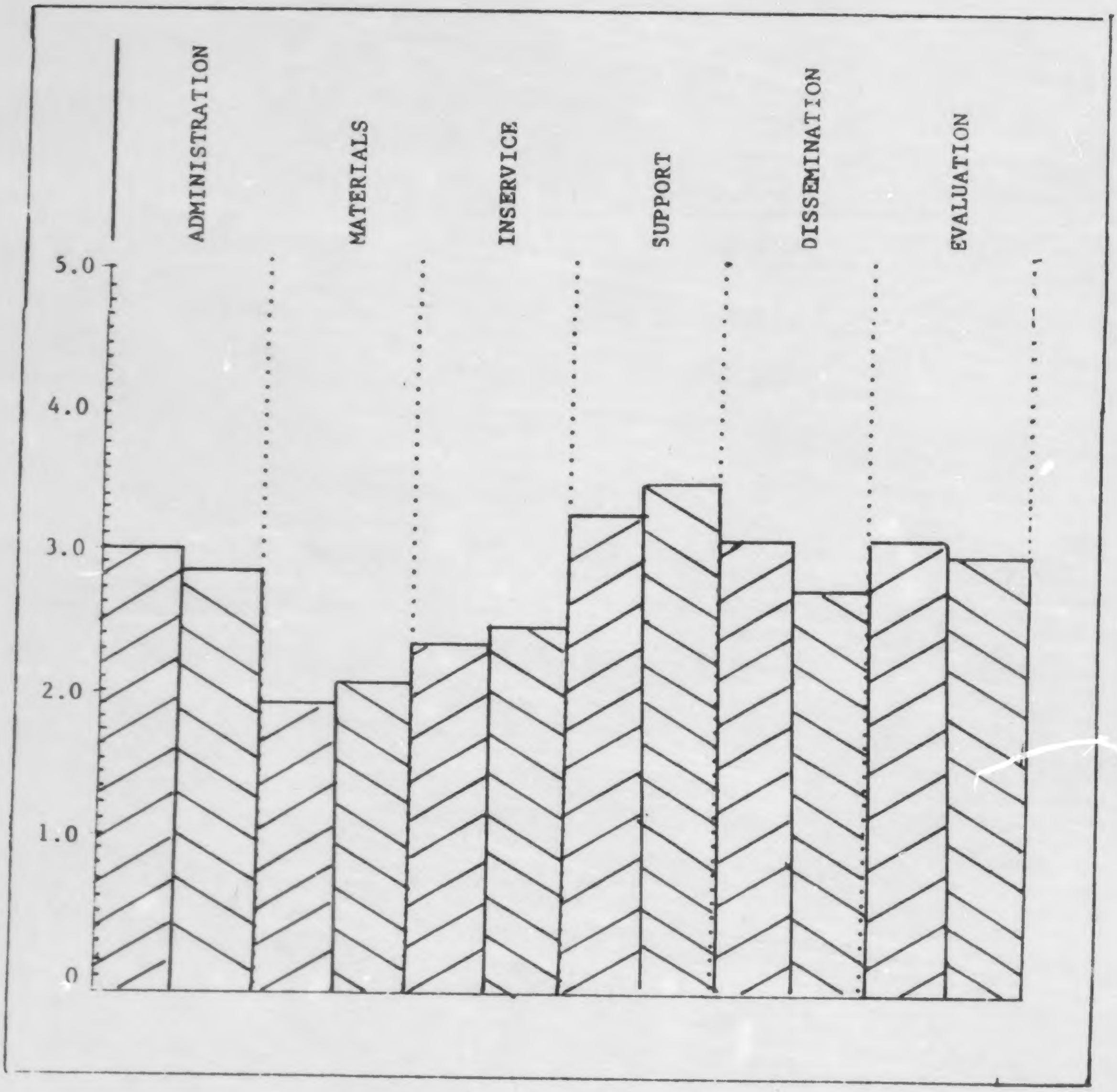
> Central office staff and school administrators spent similar levels of effort on all areas of activity except materials development (in which school administrators were more involved) and inservice (in which central office staff were more involved). Most effort was spent on support and least on materials development...
>
> - For administration, if central office staff put in more effort, school administrators did less, spending more time on support to teachers, instead.
> - Materials development was relatively high for only one central office respondent (Baltimore County), and two school administrators (Baltimore City and Worcester).
> - Inservice took more time for central office staff.
> - With the exception of one person from each role (each in a different LEA), all respondents invested energy in supporting school efforts.
> - Dissemination and evaluation tasks were dealt with similarly between role groups and across counties except that in one county (Howard) neither activity was done by central office staff or school administrators. (Roberts et al., 1982)

As can be seen in Table 21, during 1982-83, central office staff and school administrators combined spent the least amount of time on materials development (2.00), and the most amount of time on supporting school implementation (3.31).

Individual LEA responses indicate that there was some level of effort spent on each activity across all of the LEAs. LEA responses varied: administration was rated highest by two LEAs (Anne Arundel and Carroll);

Table 21

Level of Effort: Mastery Learning 1982-83



Values range from 0 "none" to 5.00 "a great deal" of time and energy.

▨ Central Office Staff
▧ School Administrators

development of materials and designing/conducting inservice by none of the LEAs; supporting school implementation by two LEAs (Anne Arundel and Baltimore City); dissemination by one LEA (Howard); and evaluation by three LEAs (Allegany, Baltimore County, and Worcester).

Interactive support. Teachers implementing ML could receive training/information from four sources: developers, MSDE, central office staff, and school-based staff (school administrators and teachers). The majority of teachers responding to the survey (N=46) received information and training from school administrators and teachers (54%). The percentages of teachers receiving information and training from developers, MSDE, central office staff, and school administrators and teachers did not vary greatly (percentages ranged between 39% for central office staff and 54% for school administrators and teachers).

In Allegany and Baltimore City, most teachers (63% and 92%, respectively) received information/training from school-based staff. The majority of teachers in Baltimore (67%) and Carroll (100%) counties received information/training from three sources--developers, MSDE, and central office staff. In Worcester County, 43% of teachers received information/training from all four sources. In Howard County, all of the teachers received their training from MSDE (100%) and in Anne Arundel from developers and MSDE.

Survey respondents were asked to rate the support received from teachers, principals, central office staff, MSDE, and developers (from 1.00 = very poor, to 5.00 = excellent). Ratings of interactive support from the 1982 survey are summarized below:

> ... for ML, central office staff and school administrators were generally more positive in their assessment, rating all groups between 4.00 and 5.00. Teachers were, in general, less positive, rating the groups between 3.00 and 4.00. Central office staff

> gave the highest rating of support to teachers; school administrators gave their highest rating to central office staff; and teachers indicated that school administrators had provided the most support. (Roberts et al., 1982)

As shown in Table 22, respondents of the 1983 survey rated the interactive support received from all five role groups as 3.00 (average) or above, indicating that each role group was perceived positively by other educators involved in ML in terms of providing information, help, and general support. Developers received the lowest ratings (3.21), while teachers received the highest ratings (4.11). School administrators were generally more positive in their assessments (except for their ratings of school administrators, which were slightly lower than the ratings of central office staff for school administrators). Teachers were, in general, least positive in their ratings.

In general, teachers received most of their information and training from school administrators and teachers. Three LEAs used all four groups as trainers, two LEAs used three role groups, and two LEAs used two role groups. Developers and MSDE were used as trainers/sources of information by all seven LEAs. The quality of support received was average or above average for all role groups across all of the LEAs. Developers received the lowest ratings and teachers received the highest ratings. Teachers were least positive in their ratings of interactive support.

Impact

This section discusses ML impact in the area of training and on school systems, individual schools, central office staff, school administrators, teachers, and students.

Training. MSDE TAs held one two-day follow-up training session in the fall of 1982 at Harper's Ferry, West Virginia for those LEAs implementing ML. Presentations were designed to address common needs specified by the participants in a needs assessment survey sent out prior to the follow-up.

Table 22

Perceptions of Support Received: Mastery Learning, 1983-83

Respondents	N	Support Groups				
		Teachers	School Administrators	Central Office Staff	MSDE	Developers
Central Office Staff	14	4.21	4.29	4.29	3.93	3.00
School Administrators	13	4.31	4.25	4.38	4.31	3.69
Teachers	48	4.02	3.77	3.52	3.37	3.13
Total	75	4.11	3.95	3.81	3.64	3.21

Mean ratings range from a low of 1.00 (very poor) to a high of 5.00 (excellent).

Whole group and small group presentations were conducted by MSDE TAs, by LEAs having expertise in a certain need area, and by external consultants. Topics of presentations included: initiating ML (planning and implementation), designing and managing corrective and enrichment activities, analyzing prerequisite and component skills, disseminating ML to new schools, training staff, and program evaluation. Approximately 42 ML participants were present, with six LEAs sending cross-hierarchical teams. One LEA participated only by having two administrators make a brief presentation. It was understood that participants were to acquire knowledge or skill to apply directly and also to transfer to others (by "turnkey" training).

ML participant evaluations of the session conducted by MSDE were positive (e.g., clarity, relevancy, and accomplishment of objectives; support from MSDE). The mean responses ranged from 4.05 to 4.49 (1.00 being the least positive and 5.00 being the most positive). The majority of the ML participants considered the local group sharing (formal sessions and informal conversations) as the best part of the follow-up. Participants also liked the sessions on testing (test construction and testing what is taught) and staff development.

As indicated in the section on interactive support, the majority of implementing teachers received their training from school administrators and teachers. Most teachers felt that they understood the model (73%) and that their teaching ability had improved as a result of their involvement with ML (64%). Only 16% of the respondents felt that their teaching ability had not changed. In general, this pattern of results was fairly consistent across the seven LEAs. In four LEAs (Anne Arundel, Baltimore County, Carroll, and Howard), 100% of the teachers felt they understood the model. However, at least 50% of the teachers in three of the LEAs (Anne Arundel, Carroll, and Howard) felt that they needed to learn more about actually implementing the model. Allegany and Worcester had the lowest percentage of teachers (60% and 57%, respectively) indicating that they understood the model. With the exception of Allegany, at least 50% of the teachers in the other six LEAs felt that their teaching ability had improved (100% of the teachers in Anne Arundel, Baltimore County, Carroll, and Worcester). A fairly high level of fidelity of implementation was maintained; a noteworthy accomplishment with a model as complex as ML. This faithful use of the model and the teachers' knowledge, skills and attitudes can be related to the effectiveness of the training received by the implementers, all of which link in some way back to MSDE initiatives.

School system. The impact of an innovation on a school system involves changes in practice or policy by a group or organizational unit that affect or could affect more than a single school or single group of educators. Systemic impact included:

- knowledge of planned change factors necessary to implement a new program (1 LEA) and of the research on effective teaching (1 LEA)
- development of a training model for inservice credit (1 LEA)
- commitment, cooperation, and sharing among educators (4 LEAs)
- policy decisions such as releasing teachers to coordinate the program and/or to provide training and coaching (2 LEAs) and decisions to base grading on mastery (1 LEA).

These results suggest that educators were impressed by the processes of planned change and found the teaming concept to be effective. They were also influenced by the perceived instructional value of ML.

Central office staff. ML impacted on individual central office staff in a variety of ways. Central office staff felt that SITIP involvement provided them with knowledge of new teaching strategies (3 LEAs), understanding of one's role in a project (1 LEA), the opportunity to work as a team member with local and state educators in order to improve student achievement and attitudes (1 LEA), an improved understanding of the learning process and the importance of reteaching (2 LEAs), an awareness of the necessity to be constantly aware of student needs (1 LEA), and the opportunity to share ideas with other educators (1 LEA). These results reflect individual supervisor's perceptions and attend almost equally to ML and to the processes of planned change advocated by SITIP TAs. These outcomes suggest that central office staff gained knowledge and developed positive attitudes about the program, but did not necessarily develop new skills or practices.

Schools. The impact of an innovation on a single school involved only those educators within that school. ML impact on single schools included:

- better long range planning (1 LEA)
- arrangement of schedules so that teachers can work together to develop correctives and extensions and have common planning time (2 LEAs)
- a set of simplified, sequenced objectives (1 LEA), the development of a cross-reference system to allow students to keep track of objectives, instruction, and assessment, and the use of teacher's aides to correct tests and keep records (1 LEA)
- support to teachers (e.g., recognition, provision of materials/ equipment) (2 LEAs)
- teacher sharing/enthusiasm with some grass-roots expansion to other subject areas and teachers (5 LEAs)
- better knowledge of inservice training and of new instructional techniques (1 LEA), a concern for achievement (1 LEA), and improved teaching and learning in general (1 LEA).

These results were influenced primarily by groups of teachers within a particular school with opportunity to work together, frequently with support and leadership resulting from a partnership that included a principal and a department head or "lead" teacher.

School administrators. School administrators felt that their involvement in ML enabled them to learn about a new teaching strategy (5 LEAs) and to share ideas with peers (1 LEA); gave them greater appreciation of what teachers can do (2 LEAs); an improved understanding of the learning process and better organizational skills (1 LEA); made them more aware of the necessity of planning (1 LEA); and resulted in better cooperation with staff (1 LEA).

These results reflect commitment to quality instruction, and appreciation of opportunities to work with teachers.

Classrooms and teachers. Impact on teachers fell into 13 categories under the three general areas of: (1) increased knowledge, (2) improved skills, and (3) strengthened attitudes/perceptions. (See Table 23.) In addition, survey respondents assessed relative instructional value and impact on teachers in six areas on a five-point Likert scale. (See Table 24.)

Improved skills in a new teaching technique and in organization/planning were the teacher impact categories reported by all role groups across the largest number of LEAs. As can be seen in Table 24, survey respondents in general indicated that ML was a worthwhile, workable model, with mean responses ranging from 3.85 to 4.35 (on a scale from 1.00 least positive to 5.00 most positive). They also believed that teachers enjoyed ML and increased their knowledge and skills (mean responses ranged from 3.77 to

Table 23

Impact on Teachers as Reported by Each Role Group: Mastery Learning, 1982-83

Impact on Teachers	Role Groups (Reported in No. of LEAs; N=7)		
	CO	SA	T
As a result of ML teachers have:			
Increased knowledge			
- of the curriculum/program.	3	1	4
- of the components of effective teaching.	3	1	5
- of the learning process.	1	0	2
Improved skills			
- in a new teaching technique.	5	4	7
- in organization/planning.	5	3	7
- in the effective use of time.	1	1	2
- in the components of effective teaching (e.g., review, prerequisite skill development, diagnosis, instructional objectives, supplemental instruction).	3	2	4
- in assessing and addressing student needs.	2	2	0
- in curriculum development.	0	0	1
Strengthened attitudes/perceptions			
- of what students can accomplish.	3	2	2
- of teachers' confidence and self-image.	1	1	1
- about teaching (e.g., involvement, cooperation, sharing, satisfaction, recognition).	3	2	5
- of the value of specific components of effective teaching.	2	1	3

CO = Central Office; SA = School Administrators; T = Teachers

Table 24

Instructional Impact as Perceived by Survey Respondents: Mastery Learning, 1982-83

Impact on Instruction	Role Groups			
	CO N=15	SA N=13	T N=48	Total N=76
Instructional Value				
Works in classroom.	4.60	4.50	4.23	4.35
Is worth the work it takes.	4.27	4.31	3.60	3.85
Is a worthwhile teaching approach.	4.60	4.38	4.15	4.28
Impact on Teachers				
Teachers enjoy it.	3.93	4.08	3.64	3.77
Teachers have increased knowledge.	4.60	4.38	3.83	4.08
Teachers have increased skills.	4.53	4.15	3.92	4.08
Impact on Students				
Students enjoy it.	4.07	4.15	4.08	4.09
Students are less disruptive.	3.40	3.42	3.02	3.16
Students' achievement has increased.	3.73	3.83	3.75	3.76
Students are learning more.	3.93	4.00	3.50	3.67
Students' general behavior is better.	3.33	3.25	2.98	3.09
Time				
Teachers spend more time preparing students.	3.87	4.33	3.98	4.01
Teachers cover curriculum in less time.	2.53	3.15	2.33	2.51

Mean ratings range from 1.00 (strongly disagree) to 5.00 (strongly agree).
CO = Central Office; SA = School Administrators; T = Teachers

4.08). However, these responses were not as high as the responses given to classroom impact. Teachers were consistently lower than the other role groups in their ratings of teacher impact and instructional value.

Students. Impact of ML on students fell into 17 categories under the three general areas of: (1) improved attitudes or awareness, (2) increased achievement, and (3) benefits from better instruction. (See Table 25.) In addition, survey respondents assessed relative impact on students in five areas on a five-point Likert scale. (See Table 24.) Also, LEAs were asked to submit data summaries of cognitive and affective measures assessing ML impact in terms of student achievement and attitudes. The results of these measures are also summarized in this section.

Improved attitudes about their learning ability (e.g., increased confidence, success, higher expectations) was the most popular category of student impact reported across all three role groups.

Teachers across the largest numbers of LEAs reported three main student impact categories: (1) increased achievement in test scores, (2) improved attitudes about their learning ability, and (3) benefits from better instruction which provided a structured, consistent lesson format with specified objectives.

Improved attitudes about their learning ability was the one student impact category reported by school administrators across the largest number of LEAs.

Central office staff found that students increased achievement in test scores and improved attitudes about their learning ability.

As can be seen in Table 24, survey respondents in general felt that ML had somewhat of an impact on students in terms of better attitudes and

Table 25

Impact on Students as Reported by Each Role Group: Mastery Learning 1982-83

Impact on Students	Role Groups (Reported in No. of LEAs; N=7)		
	CO	SA	T
As a result of ML students have:			
Improved attitudes or awareness			
- about their learning ability (e.g., increased confidence, higher expectations of success).	4	4	4
- about their learning responsibilities (e.g., accountability).	1	0	1
- about learning/school (e.g., increased interest, cooperation, involvement, enthusiasm, motivation).	3	2	3
- of areas of strength and weakness.	0	1	3
- about tests.	0	0	2
Increased achievement			
- in mastery/retention of facts and skills.	1	0	3
- in problem-solving abilities & conceptual understanding.		0	1
- especially lower achievers.	1	1	1
- in grades.	0	1	0
- in test scores.	5	2	5
- in general.	0	0	1
Benefited from better instruction which provides			
- a structured, consistent lesson format with specified objectives.	1	0	4
- a clear understanding of teacher expectations.	1	1	2
- less pressure.	0	1	1
- fewer gaps in skill development.	1	1	1
- a second chance to master -- "no fault" test.	1	0	2
- opportunities to relearn -- correctives and extensions.	1	0	1

CO=Central Office; SA=School Administrators; T=Teachers

achievement, with mean responses ranging from 3.09 to 4.09 on a scale from 1.00 (strongly disagree) to 5.00 (strongly agree). Educators felt that students enjoyed ML (4.09) and that they were learning and achieving more (3.67 and 3.76, respectively), but were less sure whether student behavior was better/less disruptive (3.09 and 3.16, respectively). Teachers tended to be lower in their ratings of student impact than were central office staff and school administrators, except in their ratings of enjoyment and achievement which were slightly higher than the ratings given by central office staff. In general, respondents rated classroom impact higher than student impact, suggesting that overall instruction improved but direct impact on individual students was less readily seen.

Affective measures of student impact were submitted by five of the seven LEAs.* Allegany and Carroll counties gave their students the Student Questionnaire before ML implementation (pre) and at the end of the implementation period (post).** The questionnaire consists of seven questions or dimensions (e.g., recognition of differences, understanding of lesson, enjoyment of lesson, ease of lesson, learning of lesson, better grades, better lessons). Respondents answered using a five-point scale ranging from 1.00 (not at all) to 5.00 (yes a lot). There are elementary and secondary versions of the questionnaire.

In Allegany County, the questionnaire was given to students in grades 4 through 12. In Carroll County, the questionnaire was administered to sixth graders using the ML model in their social studies classes. As can be seen in Table 26, mean responses averaged across the two LEAs ranged from 3.32 to

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* Baltimore and Howard counties did not provide affective data.

** Carroll County also administered the questionnaire midway through the implementation period, but these data are not reported.

Table 26

Student Attitudes (Student Questionnaire): Mastery Learning, 1982-83

LEAs	Allegany		Carroll		Total	
Dimensions	$\bar{X}$ - Pre N=	$\bar{X}$ - Post N=	$\bar{X}$ - Pre N=155	$\bar{X}$ - Post N=148	$\bar{X}$ - Pre* N=2	$\bar{X}$ - Post* N=2
1. Recognition of differences	3.47	3.29	4.01	4.53	3.74	3.91
2. Understanding of lesson	4.25	4.19	4.80	4.64	4.52	4.41
3. Enjoyment of lesson	4.01	4.09	4.19	4.33	4.10	4.21
4. Ease of lesson	3.48	3.53	3.17	3.97	3.32	3.75
5. Learning of lesson	3.76	3.67	4.03	3.97	3.89	3.82
6. Better grades	3.60	3.71	3.32	3.78	3.46	3.74
7. Better lessons	3.72	3.81	3.97	3.98	3.84	3.89

* N equals number of LEAs.

Mean responses range from 1.00 (not at all) to 5.00 (yes a lot). The higher the score, the higher the agreement with the dimension measured.

4.52 on the pre and 3.74 to 4.41 on the post test. Comparing the pre and post mean responses for the total group on each question, the responses increased (became more positive) on the post test for five of the seven dimensions: recognition of differences between previous lessons and the lessons where ML was used; enjoyment of the lesson; ease of the lesson; better grades; and an overall better lesson. On two dimensions the mean responses decreased on the post test: understanding of the lesson and learning more from the lesson.

These results were fairly consistent within the two individual LEAs except for Allegany whose mean responses also decreased from pre to post test on recognition of differences. Students in Carroll County tended to be slightly more positive in their responses than the students in Allegany County.

Anne Arundel County and Baltimore City gave their secondary students the Learning Environment Inventory (LEI) at the end of the implementation period (post). The LEI contains 105 items measuring 15 dimensions. Eight dimensions were relevant for assessing ML impact on student attitudes. Each is defined below:

- Competitiveness--Students compete to see who can do the best work.
- Satisfaction--Students enjoy their class work.
- Difficulty--The work of the class is difficult.
- Friction--There are tensions among certain groups of students that tend to interfere with class activities.
- Disorganization--The class is disorganized.
- Apathy--Failure of the class would mean little to individual members.
- Favoritism--Certain students are favored more than the rest.
- Environment--The books and equipment students need or want are easily available to them in the classroom.

Students answered the items using a four-point scale ranging from 1.00 (strongly disagree) to 4.00 (strongly agree). The higher, the score the higher the agreement with the dimension being measured. High agreement is desirable for satisfaction and environment; for all other dimensions except competitiveness low scores are desirable. Competition may or may not be considered desirable depending on the philosophy of the school. Both LEAs decided to measure all eight dimensions relevant to ML. As can be seen in Table 27, mean responses averaged across the two LEAs ranged from 2.19 (favoritism) to 2.70 (friction). In Anne Arundel County, the dimension with the highest agreement (2.82) was environment, and the lowest agreement (2.07) was favoritism. In Baltimore City, competitiveness received the highest score of 2.76, and difficulty the lowest score of 2.07.

On satisfaction and environment, where high agreement is desirable, the total LEA responses were higher than the test norms. On the remaining dimensions (except competitiveness) where lower scores are desirable, total LEA responses were lower than test norms on difficulty and apathy and the same on disorganization. However, combined LEA scores were higher than the norms on friction and favoritism (especially Baltimore City). These results suggest that most classes have above average learning environment on several dimensions, but there is room for improvement in dealing with disorganization, friction, and favoritism.

Worcester County gave its elementary students the My Class Inventory (MC) at the end of the implementation period (post). Instead of a pre test, the four teachers implementing ML indicated how they predicted their students would respond. The My Class Inventory is an elementary version of the LEI with 45 items measuring five out of the 15 dimensions on the LEI. Four

Table 27

Student Attitudes (Learning Environment Inventory and My Class): Mastery Learning, 1982-83

Affective Measures	Learning Environment Inventory - LEI (Secondary)				My Class Inventory - MC (Elementary)			
Units Measured	National (Test Norms)	Anne Arundel	Baltimore City	Total	Worcester			
Dimensions**	X	X - Post N=79	X - Post N=61	X - Post N=2*	Pre-Teachers(N=4) % Yes	% No	Post-Students (N=69) % Yes	% No
1. Competitiveness	2.43	2.53	2.76	2.64	75	25	68	32
2. Satisfaction	2.40	2.36	2.52	2.44	89	11	68	32
3. Difficulty	2.67	2.61	2.07	2.34	14	86	38	62
4. Friction	2.40	2.67	2.73	2.70	44	56	56	44
5. Disorganization	2.35	2.44	2.26	2.35				
6. Apathy	2.54	2.48	2.47	2.47				
7. Favoritism	2.03	2.07	2.32	2.19				
8. Environment	2.40	2.82	2.49	2.66				

* N equals number of LEAs.

LEI - Mean responses range from 1.00 (strongly disagree) to 4.00 (strongly agree). The higher the score, the higher the agreement with the dimension measured.
Test norms were based on 1048 subjects in 65 classes in a variety of subject areas during 1969.

MC - Responses are "yes" or "no." The higher the percent of "yes" answers, the higher the agreement with the dimension measured.

** Higher scores are desirable for satisfaction and environment; for all other dimensions expect competitiveness, low scores are desirable. Competitiveness may or may not be considered desirable depending upon the philosophy of the school.

dimensions were relevant for assessing ML impact on student attitudes (i.e., competitiveness, satisfaction, difficulty, and friction). Responses are "yes" and "no" and the higher the percent of "yes" answers, the higher the agreement with the dimension being measured. Like the LEI, high agreement is desirable for satisfaction and low agreement for difficulty and friction. Desirable scores on competitiveness depend upon individual school philosophies. Worcester decided to measure all four dimensions relevant to ML.

The teachers predicted a high level of agreement with competitiveness (e.g., students feel that ... "students compete to see who can do the best work") and satisfaction (e.g., students enjoy class). The teachers predicted a lower level of agreement with difficulty (e.g., students do not feel that classroom work is too difficult) and were unsure about friction. The students' responses followed the same patterns, indicating that the students responded the way their teachers predicted. There are no national norms available for the MC.

Cognitive measures of student impact were submitted by five of the seven LEAs. While all LEAs agreed to collect and summarize student achievement data, each was free to determine the kind of measure used and the design. For instance, some LEAs used teacher made tests; others used norm referenced measures. Some LEAs reported class means for final (post) tests of ML students; others compared ML students with those in "regular" (control) classes. Scores reported included mean test scores, percent of students achieving "mastery," and grade equivalents. In three cases, LEAs reported data for two years. Student achievement data were received from: Allegany, Anne Arundel, Baltimore County, Carroll and Worcester. Each is reviewed briefly.

Allegany County reported pre and post mathematics and reading grade equivalent scores on the California Achievement Test (CAT) for grades 3 through 8 during 1981-82 and for grades 3 through 9 during 1982-83. In all cases gains were made. Allegany County also reported the number of students achieving mastery on summative tests given across the various ML subject areas. In grades K through 6, 84.5% of the students were achieving mastery, as were 80.1% of the students in grades 7 through 12.

Anne Arundel County used a teacher-made criterion-referenced test to assess student achievement in biology. Seventy-eight high school students (9-12th grades) who had been taught with the ML technique (experimental group) received a mean score of 91.97 on the 132 item test compared to a non-ML group (control) of 73 students whose mean score was 69.49 (a difference of 22.48 points).

In Baltimore County, 159 third and 107 fourth grade students in the three elementary schools implementing ML (experimental) and 119 third and 127 fourth grade students in three comparable schools not using ML (control) were pre and post tested on the mathematics portion of the Metropolitan Achievement Test (see Table 28). Both percentiles and grade equivalent scores were reported. Both the ML and non-ML schools showed gains between the pre and post tests. The ML schools showed larger gains, especially in the third grade scores. In one experimental site, percentile scores increased from 28th to 56th for third grade and from 28th to 54th for fourth grade. One of the three elementary schools was involved in ML (grades three and four) during the 1981-82 school year. After their second year of exposure to ML, students scored in the 96th percentile on the Metropolitan Achievement Test. Gains for that school exceeded normative predictions.

Table 28

Metropolitan Achievement Test Scores for
Baltimore County: Mastery Learning, 1982-83

Year	Grade	Group	N	National Percentiles			National Grade Level		
				Pre	Post	Gain	Pre	Post	Gain
1982-83 (All schools)	3	E	159	50	76	+26	3.2	5.0	+1.8
		C	119	64	74	+10	3.6	4.9	+1.3
	4	E	107	58	82	+24	4.4	6.6	+2.2
		C	127	62	84	+22	4.6	6.7	+2.1
1981-82 (Pilot school only)	3-4			60	77	+17	3.4	4.9	+1.5
	4-5			62	82	+20	4.5	6.7	+2.2
1982-83 (Pilot school only)	3-4			68	86	+18	4.8	6.8	+2
	4-5			74	96	+22	6.1	9.0	+2.9

E=Experimental; C=Control

The highest gains were made by ML schools with the lowest initial scores. Initially high scoring sites appear to benefit less (possible influenced by the "ceiling" effect). Overall, gains were greater for ML schools than for control sites.

Carroll County reported the number of students achieving mastery on three summative tests given during the implementation of an ML unit in economics. Out of a total of 160 sixth grade students involved in ML, 89%, 80%, and 85% achieved mastery on the three tests. "Mastery" was defined as 80% students achieving 80% correct answers.

In Worcester County, cognitive assessment was done using criterion-referenced and norm-referenced tests. Two types of criterion-referenced tests were used--unit summative tests and a comprehensive end of the year test. The overall objective of the ML project in Worcester County was 95% mastery at the

85% level. In grades one and two for mathematics, this objective was met on all unit summative tests. The objective was achieved for three out of four unit summative tests in grade three. (Third graders only used ML for four units of instruction.) On the end of the year comprehensive test, 100% of the students achieved mastery with an average score of 98% in grade one, 97% of the students achieved mastery with an average score of 98% in grade one, 97% of the students in grade two achieved mastery with an average score of 96%, and 75% of the third graders who used ML for only four units achieved mastery with an average score of 89%. These results show that the students retained what they had been taught. Scores on the California Achievement Test (CAT) confirm the results obtained on the teacher-made tests. As can be seen in Table 29, the mean grade equivalent scores on the pre test given in October 1982 and the post test given in May 1983 show increases that are larger than normal.

Table 29

CAT Scores, (Mathematics) Worcester County: Mastery Learning, 1982-83

	Pre	Post	Growth	Normal Growth
Grade 1	1.1	2.3	1.2	.8
Grade 2	2.3	3.5	1.2	.8

Not only are the mean grade equivalents high, but also the standard deviations are low in comparison to the standard deviations in previous years. These lower standard deviations indicate that students are scoring closer to the mean. As stated in the county report, "The standard deviation of 5.8 for the 82-83 second grade is very significant with a high grade equivalent mean of 3.5."

Direct "cause and effect" claims for ML impact on student achievement cannot be made on the basis of the above data and test designs used. However, for the four LEAs providing cognitive data, large percentages of students have mastered material, and student scores on achievement tests has shown growth which can be attributed, at least in part, to ML.

Participant Concerns

Chart 4 lists the concerns reported by ML implementers. These concerns were divided into two general areas: concerns specific to the ML model and concerns related to the process of implementation.

Most of the concerns were model-specific. They fell into three categories: concerns related to specific components of the model, time concerns, and concerns related to the educational value of ML. The largest number of LEAs reported time concerns.

Concerns related to the process of implementation were directed at school (insufficient preparation time), district (inflexible LEA budget process), and state (unclear evaluation guidelines from MSDE) levels.

Chart 5 lists the recommendations/solutions reported by ML implementers. These recommendations were divided into five general areas: classroom implementation, implementation/preparation, involvement, expansion, and external assistance. The largest number of LEAs made recommendations in the area of implementation/preparation (especially increasing preparation time) and in the area of expansion (especially increasing the numbers of teachers, schools, students, and subject areas).

Very few of the recommendations were solutions for the concerns stated. The majority of the concerns expressed were model specific; however, the majority of the recommendations or solutions were process oriented. Six out

Chart 4

Concerns/Problems Reported: Mastery Learning, 1982-83*

The model--ML...

- Is difficult to use with some subjects/topics (2)
- Is difficult to group students for correctives/extensions (1)
- Is difficult to find appropriate enrichment activities (2)

- Requires too much time/effort on record-keeping (1)
- Requires too much time for student testing (1)
- Requires too much time in general (7)
- Reduces curriculum coverage (1)

- Holds back academically talented students (5)

The process of implementation

- Insufficient time for preparation (of lessons) (2)
- Inflexible LEA budget process (1)
- Unclear evaluation guidelines from MSDE (1)

* Figures in parenthesis indicate the number of LEAs making a given statement.

Chart 5

Recommendations/Solutions: Mastery Learning 1982-83*

Classroom implementation

Develop/use computerized record-keeping system or provide more clerical help (1)
Have smaller classes (1)

Implementation/preparation

Increase preparation time (5)
Increase number of teachers involved in curriculum/unit development (2)
Sequence units more carefully (1)

Involvement

Encourage teachers to increase knowledge and skills (e.g., release time for professional growth) (3)
Have only voluntary participation (2)
Compensate teachers for after school training/planning (2)

Expansion

Increase numbers of teachers, students, schools, subject areas (6)
Before expansion, measure impact on student achievement (2)

External assistance

MSDE should -provide: funds for local training (1)
more funds (1)
research updates on school improvement (1)
more help (in general) (1)
-encourage more inter-county networking (2)

* Figures in parenthesis indicate the number of LEAs making a given statement.

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of the seven ML LEAs recommended expansion, even though some educators within those LEAs expressed concerns about the model and its implementation. In general, teachers were more concerned about classroom application, and the time needed in relation to the relative impact on students, while administrators advocated expansion. Findings suggest a careful review of both objective (e.g., test scores) and subjective (e.g., teacher perceptions) value in order to determine next steps (e.g., termination, in-school support for institutionalization, or expansion to other sites).

Summary and Conclusions

In the preceding pages, each research question or issue has been addressed and findings discussed across LEAs. Here, some general conclusions across issues and LEAs are reviewed. Then, findings are summarized for each LEA.*

It is apparent that LEAs have invested considerable effort in ML, and found that the instructional model had both objective and subjective value. The level of fidelity was high and, in most cases, standards of implementation of specific components were good. The demands of ML required time and effort from teachers--particularly for development of units (including tests and corrective and enrichment activities)--and also required support from administrators (e.g., development of time-saving record-keeping systems, arrangements for planning time). However, once the development work had been done, educators found ML useful, particularly for structured academic curricula.

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* Levels of information vary, in part because three LEAs were pilot sites of which one invited RBS site visits, and in part because some LEAs provided more documentation or other evidence of model implementation.

Impact was made on student achievement when ML was used for a full course or year in a given subject. Students' attitudes about their own ability and responsibility to learn increased when ML is used consistently for a given subject.

Impact was made on individual teachers' knowledge (access to a strategy of instruction) through training, and teachers' sense of efficacy increased when they used ML and saw students' benefitting from it. However, because initial involvement was so demanding, teachers needed a great deal of support (logistical and affective) if they were to use ML enough to make a real impact on students.

Impact was made on a school (the faculty and how instructional matters are dealt with) when the principal was actively involved and when the use of ML was not perceived as a strategy used occassionally by a few teachers at their discretion, but rather as a model systematically used for a given subject and grade level.

Impact was made outside the pilot school when central office staff saw the objective value (student achievement data), and when initial implementers provided assistance and training to faculty in other schools.

The strategies used to provide interactive support (and maintain some on-going resources and interest) were crucial to the relative success of the project. Positive impact was made when teachers believed that their opinions counted and that their needs were seriously considered; when local evaluators (teachers and others) had enough knowledge and skill to develop units that teachers like; when principals expected and acknowledged fidelity implementation; when coordinators provided training, coaching, materials, and relevant information/expertise (themselves or by accessing others, e.g., "master" teachers); when central office staff provided resources for development work, clearly and consistently communicated the nature and extent of their interest in the success of ML, and facilitate shared decision-making and networking. Positive impact was reduced or barriers created when: there was heavy reliance on training alone, expecting teachers' professionalism and autonomy to motivate development and implementation; development efforts were broadly spread and resources (especially staff time) were rationed. Teachers perceived that their contributions were devalued, usually due to mandate or autocratic leadership; messages from (different) administrators to teachers were conflicting or confusing (e.g., about the relative priority of the project, specific roles and responsibilities, or how a given task was to be done). (This last "barrier"--communication confusion--was made worse in some cases by MSDE TAs.)

In the following case reports of the seven LEAs implementing ML, attention is given to the influential factors mentioned above and also to specific objectives and results achieved at each site.

Allegany County. Allegany has been implementing ML for two years using a lighthouse school strategy. In September 1982, Allegany educators "hoped" to train educators to use ML and had "partly achieved" the remaining eight objectives specified in Table 18. In June 1983, all nine objectives had been "partly achieved."

- Scope and Intensity. After the first year of ML implementation (June 1982), ML was being implemented in one school, grades K-12 with approximately 25 teachers and 300 students in a variety of subject areas. Little changed in the 1982-83 school year.

- Fidelity. Allegany County educators showed the greatest adaptation of the ML model (i.e., the smallest percentage of teachers implementing all 10 ML processes or components) in comparison to the other ML LEAs (probably because a greater range of subject areas and grades were included). The ML components most consistently addressed by the Allegany teachers were corrective and enrichment activities and summative tests; the components least addressed were the breakdown of objectives into component skills, and record-keeping. The largest number of teachers reported that the "no fault" formative and summative testing and the correctives and extensions were the ML components having the greatest impact on students.

- Time. Educators spent an average of 8.5 months involved in ML across the 1982-83 school year. Teachers reported spending an average of 25% of their school week on ML-related activities. ML required teachers to spend more time preparing students (e.g., grouping, pre-testing) and allowed less time for curriculum coverage.

  School administrators spent an average of four days and central office staff an average of 13 days on ML. The combined average of both role groups (seven days) was one of the two lowest reported. School administrators and central office staff reported that ML took about the same amount of time and energy as had similar previous projects.

- Roles and Responsibilities. School administrators and central office staff combined spent the least amount of time and energy (level of effort) on developing materials (2.25)* and the most amount of energy on evaluation (3.75). School administrators spent the least amount of time on administration, developing materials, and supporting school implementation (3.00 for each area) and the most amount of time on designing/conducting inservices, dissemination, and evaluation (3.50 for each area). Central office staff spent the least amount of time on developing materials ([illegible].50) and the most amount of time on evaluation (4.00). Allegany used the California Achievement Test, the Student Questionnaire, and surveys of student, teacher, and parent reactions to evaluate ML.

  Most of the training was done by school administrators and teachers, although some teachers received training/information from developers, MSDE, and central office staff, as well. Allegany educators rated the interactive support received from these five role groups as average or above. Developers received the lowest ratings and teachers the highest. By the beginning of June 1983, information related to ML had been received by all central office staff and school administrators and by 25% of the teachers and other faculty. Training and support had been received by 25% of central office staff and school administrators, and by none of the teachers and other faculty outside the pilot school.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. ML has had an impact on training and on the school system, the school, the educators, and the students involved. In the area of training, 60% of the teachers felt that they understood the model (Allegany was one of two LEAs with the lowest percentage of teachers indicating that they understood the model). Forty percent of the teachers (the lowest percentage across the ML LEAs) felt that their teaching ability had improved as a result of their involvement with ML.

  As a result of its involvement in SITIP, the Allegany school system increased knowledge of the planned change factors necessary in order to implement a new program. The schoolwide impact of ML has been in terms of better long range planning, teacher recognition, and teacher sharing, with some grassroots expansion to other classes.

  Central office staff felt that involvement in the SITIP project gave them the opportunity to work as team members with local and state educators in order to improve student achievement and attitudes, and made them more aware of the necessity to be constantly in touch with student needs.

  Allegany educators indicated that ML has had an impact at the classroom level (e.g., ML is a worthwhile, workable instructional model), but their ratings of classroom impact were lower than those of other ML LEAs. The classroom impact of ML was related to the use of a structured lesson format with clearly specified objectives and the opportunity to relearn--correctives and extensions.

  Teachers increased their knowledge of the components of effective teaching, of the curriculum/program being used in their school, and of the learning process in general. They improved their skills in a new teaching technique, in organization/planning, in the components of effective teaching, and in assessing and addressing student needs. Strengthened attitudes/perceptions about teaching in general, about what students can accomplish, and of the value of specific components of effective teaching were also seen as impacts on teachers.

  Increased student achievement was perceived by educators and evidenced in test scores. Student impact in terms of scores on the CAT showed gains for reading and mathematics. Educators also reported that students increased their retention of facts and skills and their problem-solving abilities.

  Student attitudes became more positive after ML implementation on four dimensions of the Student Questionnaire: enjoyment of lessons, ease of lessons, better grades, and overall better lessons. Educators reported improved student attitudes or awareness about tests and about learning capability.

- Participant Concerns. Allegany educators expressed model-specific concerns (e.g., ML is difficult to use with some subjects/topics; it is difficult to group students for correctives/extensions; the model requires too much time in general; and ML holds back academically talented students). They also expressed concerns related to the process of implementation (e.g., insufficient time for preparation of lessons).

  Changes/recommendations suggested by Allegany implementers fell into the areas of classroom implementation (e.g., have smaller classes), implementation/preparation (e.g., increase preparation time), involvement (e.g., have only voluntary participation), and external assistance (e.g., more funds for training and more/better help in general from MSDE).

Factors influencing the relative success of ML in Allegany included: (1) on-site assistance from MSDE by a delegate TA (outside the established TA team), which built on an existing good LEA/MSDE relationship but which did not readily access network information and ML expertise; (2) reassignment of the school principal which then required time for communication/orientation; (3) implementation across several subjects and grade levels, which increased complexity and somewhat reduced fidelity; (4) strong central office support and application of SITIP processes in planning -- particularly the formation of a cross-hierarchical steering committee -- which helped build commitment, maintain energy, and probably influenced the positive perceptions of implementers about their involvement and about ML impact on teachers and students. A point of interest is that attention was given to informing parents and community members, generating interest in the school and in the students' education. Although ML is not a major county priority, expansion is planned for the 1983-84 school year, with ML to be implemented by volunteer teachers in the vocational technical school. This expansion is encouraging since Allegany used a lighthouse strategy. However, results suggest that project activities within each school may need to be consolidated -- allocating time and effort where it is needed (e.g., for common planning time by a group of teachers), and relative fidelity may need to be reviewed and compared with student outcomes.

Anne Arundel County. Anne Arundel has been implementing ML for two years using a lighthouse strategy. In September 1982, Anne Arundel educators had "partly achieved" three of the nine objectives specified in Table 18 (improving student achievement in basic skills, informing local educators about the model, and training educators to use the model). Educators "hoped" to achieve the remaining six objectives. In June 1983, four of the six "hoped for" objectives (improving teachers' classroom competence; ensuring a match of instruction, curriculum, and tests; helping teachers become better organized; and improving time-on-task) were "partly achieved." The status of the remaining five objectives did not change between September 1982 and June 1982 (except for improving students' involvement in learning which was "hoped" for in September but was not given a status rating in June).

- Scope and Intensity. After the first year of ML implementation (June 1982), ML was being implemented in one high school with three teachers and 100 students in biology. The number of students involved increased during the 1982-83 school year.

- Fidelity. Anne Arundel was one of two LEAs maintaining the greatest fidelity to the ML model: all of the teachers addressed all 10 ML processes. The teachers reported that the "no fault" formative and summative testing and the clearly specified objectives were the ML processes having the greatest impact on students.

- Time. Educators spent an average of 10 months involved in ML across the 1982-83 school year (the highest across the ML LEAs). Teachers reported spending an average of 40% of their school week on ML-related activities. ML required teachers to spend more time preparing students (e.g., grouping, pretesting), but educators reported that teachers were able to cover the curriculum in a shorter amount of time using ML.

  The school administrators spent an average of 20 days, and central office staff an average of six days on ML. The school administrator reported that ML took "slightly more" time and energy than had similar previous projects while the central office staff person reported "substantially less" time and energy.

- Roles and Responsibilities. Central office staff spent the least amount of time and energy (level of effort) on designing and/or conducting inservice and materials development (1.00 for each area)* and the most amount of time and effort on administration and supporting school implementation (4.00 for each area). The school administrator spent the least amount of time on administration, supporting school implementation, and dissemination (3.00 for each area) and the most time on materials development (5.00).

  The training was done by developers and MSDE. Anne Arundel educators rated the interactive support received from the five role groups involved in SITIP as average or above except for developers. Teachers and MSDE received the highest ratings and developers the lowest ratings for support. By the end of the 1982-83 school year, central office interest and support had increased. One of the three teachers implementing ML was assigned as a biology resource teacher to provide assistance to teachers district wide, thus giving him the opportunity to disseminate the ML strategy. By the beginning of June 1983, information related to ML had been received by 75% of central office staff and by all faculty and school administrators at the ML school site. Training had been received by 25% of central office staff and by 25% of school administrators and other faculty at the ML school site.

- Impact. ML has had an impact on training, and on the school, the educators, and the students involved. In the area of training, all of the teachers thought that they understood and knew a great deal about the model, but they also thought that they needed to learn more.

  The school-wide impact of ML has been in terms of the arrangement of schedules so that teachers can work together to plan and to implement ML; the development of a cross-reference system to allow students to keep track of objectives, instruction, and assessment; the use of teachers' aides for test correction and record-keeping; the provision of support to teachers in the area of materials/equipment; increases in teacher interest; and better knowledge of inservice training and of a new instructional technique.

  Central office staff felt that involvement with ML provided them with an improved understanding of the learning process. School administrators felt that involvement with ML gave them a greater appreciation of what teachers can do, an improved understanding of the learning process, and better organizational skills, and enabled them to learn about a new teaching strategy and to share ideas with teachers.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Ratings of classroom level impact (e.g., ML is a worthwhile, workable instructional model) were positive (above 4.20), and were expressed in relation to clarity of teacher expectations, and the use of a structured lesson format with clearly specified objectives.

Teachers increased their knowledge of the components of effective teaching and of the learning process. They improved their skills in a new teaching technique, in organization/planning, and in the effective use of time. Strengthened attitudes/perceptions of teachers' confidence and self image, of the value of specific components of effective teaching, of what students can accomplish, and about teaching in general were also seen as impacts on teachers.

Cognitive student impact was perceived by educators and evidenced in improved grades. On a teacher-made criterion-referenced test, students involved in ML had a higher average number of correct answers than did similar students in "regular" classes (a difference of 22.48 points on a 132 point test).

Affective student impact was positive in terms of improved attitudes about their learning responsibilities and about learning and school in general. Behavior/discipline appeared to be somewhat improved. In comparison to national norms, students perceived higher levels of friction, and a more positive physical classroom environment in their ML classes, but in all other LEI dimensions there were relatively little differences between ML scores and national norms.

- Participant Concerns. Anne Arundel educators expressed model-specific concerns (e.g., it is difficult to find appropriate enrichment activities; the model requires too much time in general; and ML holds back academically talented students).

  Changes/recommendations reported by Anne Arundel implementers fell into the areas of expansion (e.g., increase numbers of teachers, schools, subject areas) and external assistance (e.g., more funds for local training from MSDE, and more encouragement from MSDE for inter-county networking).

Factors influencing the relative success of ML in Anne Arundel included: (1) the support and approval of the school principal; (2) the task-oriented leadership of the department head; (3) the dedication, creativity, and professionalism of the school-based team; (4) the proactive efforts of that team to inform and involve others; and (5) central office agreement with school staff plans for resource allocations. Two factors of interest that may also have had a positive influence were: 1) energy spent on careful development of test items to match objectives and cover the cognitive levels of thinking, and 2) course planning outlines distributed to students for their own diagnosis of success on given objectives. Given the fact that a lighthouse strategy was used, Anne Arundel developed a good program. Expansion by voluntary involvement of biology teachers in other schools may well be considered by local educators.

Baltimore City. Baltimore City has been implementing ML for two years using a pilot-district strategy. In September 1982, educators "hoped" to train teachers to use the model and to ensure a match between instruction. curriculum, and tests, and had "partly achieved" the remaining seven objectives specified in Table 18. In June 1983, one objective, informing local educators about the model, had been "achieved." The two "hoped" for objectives had been "partly achieved," and the status of the remaining six objectives remained unchanged as "partly achieved."

- Scope and Intensity. After the first year of implementation (June 1982), ML was being implemented in one high school with approximately 40 teachers in a variety of subject areas. By June of 1983, four junior highs were using ML in addition to the pilot high school, making a total of 5 schools, 150 teachers, and 3,332 students.

- Fidelity. Baltimore City educators implemented ML with a high degree of fidelity, especially considering the wide range of subject areas included. The four ML processes or components most consistently addressed were matching tests to objectives, and giving no fault formative tests, correctives and extensions, and summative tests after each unit. The component least addressed was record-keeping.* The largest number of teachers reported that the "no fault" and summative testing were the ML components having the greatest impact on students.

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* A goal for the project is computerized record-keeping.

- Time. Educators spent an average of 6.5 months involved in ML across the 1982-83 school year. Teachers reported spending an average of 42.5% of their school week on SITIP-related activities when using ML. Interested educators in 13 disciplines were asked to develop and implement two to five units using ML (each lasting two to five weeks).* ML required teachers to spend more time preparing students (e.g., grouping, pre-testing) and allowed slightly less time for curriculum coverage. School administrators spent an average of 19 days and central office staff an average of 50 days on ML activities. School administrators and central office staff reported that ML took about the same amount of time and energy as had similar previous projects.

- Roles and Responsibilities. Central office staff spent the most amount of time and energy (level of effort) on supporting school implementation (4.00) and dissemination** (4.00) on a scale from 0 (none) to 5.00 (a great deal) and the least on materials development (2.67). School administrators spent the most effort on supporting school implementation (4.00) and the least on conducting inservice (1.67).

  Most of the training was done by school administrators and teachers. (The coordinator of the ML project at the pilot high school does the majority of the training.) Some teachers also received training from developers, central office staff, and MSDE. Interactive support received from the five role groups involved in SITIP was perceived by educators as above average. School administrators received the highest ratings and developers the lowest. Teachers gave the lowest ratings to all five groups. By the beginning of June 1983, information had been received by all central office staff. At the pilot site, school administrators and 75% of the teachers and other faculty had received information. Also at the school site, training had been received by about 50% of the teachers and 25% of other faculty. About 25% of the teachers, and about 12% of other faculty, had received help.*** (Across the LEA, a great deal more training has been done to support implementation of ML. However, that is separate from SITIP.)

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* One unit from each discipline is being reviewed and approved by a coordinator at central office for use as a resource unit for staff development purposes.

** The SITIP project is part of the district's five year plan to implement ML in all schools. School site staff have presented the project at the annual meeting of the American Educational Research Association and in the local media. The project is currently being considered for eligibility as a "promising educational practice."

*** A ML workshop was designed and was approved by MSDE for inservice credit. Fifty-three teachers have completed the workshop.

- Impact. ML has had an impact on training and on the school system, the educators, and the students involved. In the area of training, 75% of the teachers reported understanding the model and 17% felt they needed to learn more about the model.

  System-wide impact of ML has been in terms of the development of a training model for inservice credit; commitment, cooperation, and sharing among educators; and policy decisions such as a released teacher to coordinate the program and to provide training.

  Central office staff felt that involvement with ML provided them with an understanding of individual roles in a project. School administrators felt that ML enabled them to learn about a new teaching strategy, made them more aware of the necessity of planning, and resulted in better cooperation with staff.

  Ratings of classroom level impact (e.g., ML is a worthwhile, workable instructional model) were positive and were expressed in relation to the use of a structured, consistent lesson format with clearly specified objectives, fewer gaps in skill development, and the second chance given to students to master the material.

  Teachers increased their knowledge of the components of effective teaching and improved their skills in a new teaching technique, in organization/planning, in the effective use of time, in the components of effective teaching, and in assessing and addressing students' needs. Strengthened attitudes/perceptions of what students can accomplish, of the value of specific components of effective teaching, and about teaching in general were also seen as teacher impacts of ML.

  Cognitive student impact was perceived to some degree by educators, and evidenced in increased retention/mastery of facts and skills and in test scores. Although student achievement was not the main thrust of the project, on criterion-referenced tests after first time implementation of ML, 95% of a random sample of classes scored within expected norms (mastery is defined as 80% of the students achieving 80% mastery). Gains are expected to increase with increased curriculum alignment and unit sequencing.*

  Affective student impact was perceived by educators in terms of increased confidence and improved attitudes about learning and school in general, and awareness of their own strengths and weaknesses. Educators were less sure about ML impact on behavior/discipline. In comparison to national norms, ML students perceived higher levels of competitiveness, friction, and favoritism, and lower levels of difficulty, but in all other LEI dimensions there were relatively little differences between ML scores and national norms.

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* Currently no student experiences ML for a full course or semester for any subject, so cause-effect conclusions cannot be drawn systematically.

- Participant Concerns. Baltimore City educators expressed model-specific concerns (e.g., ML is difficult to use with some subjects/topics; it requires too much time/effort on record-keeping and in general; and it reduces curriculum coverage), and concerns related to the process of implementation (e.g., insufficient time for preparation, inflexible LEA budget process, and unclear evaluation guidelines from MSDE).

  Changes/recommendations reported by implementers fell into the areas of classroom implementation (e.g., develop/use computerized record-keeping systems or provide more clerical help), implementation/preparation (e.g., increase preparation time, increase the number of teachers involved in curriculum/unit development, and begin sequencing units), and expansion (increase the number of teachers, schools, students, and subject areas).

Factors influencing relative success included: (1) central office interest and support; (2) involvement of the principal for planning and leadership; (3) the dedicated and enthusiastic leadership and extensive support and training efforts of the teacher-coordinator; (4) administrative decision to release that coordinator from regular classroom responsibilities; (5) the hard work and continued involvement of the teachers. Overall, the program at Forest Park involved teachers in many activities to contribute to their professional growth--appropriate since staff development was a major project objective. However, that diversity across disciplines resulted in many little pieces of work in a lot of areas with no concentrated effort in any given subject. If impact is to be made on students, educators may need to continue development of sequenced units for a complete course or semester in those subjects most likely to prove rewarding. If impact on teachers' instructional expertise (knowledge of ML and related areas, skill in using the ML model or appropriate components in relation to student needs, etc.) continues to be a primary objective, educators may consider how to "keep alive" positive interest among teachers and/or expand--either the knowledge base and level of expertise, or to other schools. It might also be useful for project participants to clarify their understanding of the relationship between the two goals of staff development and student achievement, and the appropriate levels of effort to be contributed to each.

Baltimore County. Baltimore County has been implementing ML for two years using a lighthouse strategy. In September 1982, Baltimore County educators had "hoped" to achieve three objectives (i.e., improving teachers' classroom competence, helping teachers become better organized, and improving time-on-task) and had "partly achieved" the remaining four objectives specified in Table 18 (with the exception of improving student achievement in other subjects and improving students' involvement in learning which were not considered as objectives). In June 1983, three objectives (improving student achievement in the basic skills, informing local educators about the model, and ensuring a match of instruction, curriculum, and tests) had been "achieved." The remaining four relevant objectives had been "partly achieved." The only objective which did not increase in status between September 1982 and June 1983 was training educators to use the model, which remained as "partly achieved." In June 1983, an additional objective not specified in September has been achieved--evaluating the effectiveness of "second generation training."

- Scope and Intensity. After the first year of ML implementation (June 1982), ML was being implemented in one elementary school with three teachers and 80 students in mathematics. As of June 1983, three elementary schools, 13 teachers, and 325 students were involved in ML in mathematics.

- Fidelity. Baltimore County educators implemented ML with a high degree of fidelity. The three ML processes that were not addressed by all the teachers were the breakdown of objectives into component skills, the testing of both higher and lower order thinking skills, and record-keeping. The largest number of teachers reported that "no fault" formative and summative testing were the ML components having the greatest impact on students.

- Time. Educators spent an average of approximately 10 months involved in SITIP across the 1982-83 school year. Teachers reported spending an average of 50% of their school week on SITIP-related activities. ML required teachers to spend more time preparing students (e.g., grouping, pretesting) and allowed less time for curriculum coverage.

  School administrators spent an average of four days and central office staff* an average of 20 days on SITIP activities. Central office staff reported that SITIP took about the same amount of time and energy, and school administrators felt that SITIP took slightly less effort than similar previous projects.

- Roles and Responsibilities. Central office staff spent the most amount of time and energy for ML on evaluation (4.00)** and the least amount of effort on materials development (1.50). School administrators did not spend any time on inservice and little time on any of the remaining activities. The most effort was spent on supporting school implementation (2.00).

  Most of the training was done by developers, MSDE, and central office staff. The two pilot teachers were also given release time to coach new teachers using ML.

  Interactive support received from the five role groups involved in SITIP was perceived by educators as average or above with the exception of teachers' ratings of developers. Teachers and central office received the highest ratings and MSDE and developers the lowest. Teachers gave the lowest ratings except to MSDE where central office staff gave a lower rating. By the beginning of June 1983, information had been received by 50% of the school administrators and by 25% of all other educators. Training had been received by 25% of the central office staff and school administrators and by about 12% of the teachers and other faculty. No central office staff and about 12% of the other educators in the district had received help.

- Impact. ML has had an impact on training and on the school system, the educators, and the students involved. In the area of training, all of the teachers reported understanding the model and felt that their teaching ability had improved as a result of being involved in SITIP.

  System-wide impact of ML has been in terms of increased knowledge of the research on effective teaching, commitment. cooperation, and sharing among educators, and policy decisions such as releasing teachers to provide training and coaching.

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* Central office staff were also involved with Student Team Learning.

** Level of effort was rated on a scale from 0 (none) to 5.00 (a great deal).

Central office staff felt that involvement with ML provided them with knowledge of new training strategies and the opportunity to share ideas with other educators. School administrators felt that SITIP involvement enabled them to learn a new teaching strategy.

Ratings of classroom level impact (e.g., ML is a worthwhile, workable instructional model) were positive and were expressed in terms of the use of a structured, consistent lesson format with clearly specified objectives.

Teachers increased their knowledge of the curriculum/program, improved their skills in a new teaching technique and in organization/planning, and strengthened their attitudes/perceptions of teachers' confidence and self image, about teaching in general, and of the value of specific components of effective teaching.

Cognitive student impact was perceived by educators and evidenced in test scores. On the Metropolitan Achievement Test, ML schools showed larger gains from pre to post tests in comparison to comparable non-ML schools, especially in the third grade scores. These gains exceeded normative predictions.

Affective student impact was perceived by educators in terms of increased confidence and improved attitudes or awareness about their learning responsibilities, about learning and school in general, about tests, and of their specific areas of strength and weakness. Educators were less sure about the effects that ML had on improving student behavior/discipline.

- Participant Concerns. Baltimore County educators expressed model-specific concerns (e.g., it is difficult to find appropriate enrichment activities, ML requires too much time/effort, it holds back academically talented students). Changes/recommendations reported by implementers fell into the areas of implementation-- preparation (e.g., increase preparation time), involvement (e.g., compensate teachers for after school training/planning), expansion (e.g., increase number of teachers, students, schools, subject areas; and before expansion, measure impact on student achievement), and external assistance (e.g., MSDE should provide research updates on school improvement).

Factors influencing relative success included: 1) a stable cross-hierarchical team with strong mutual respect and sincerity among members; 2) strong commitment, hard work, and professionalism by teachers; 3) thoughtful support from central office staff and school based administrators, with attention to careful planning and data-based decision-making. Initial implementation was relatively small-scale, with attention focused on one subject area:

decisions to expand were based on proven "objective" value (student test scores increased) and on "subjective" value (teachers found ML useful for mathematics in grades three and four). Baltimore County has successfully applied SITIP processes and is implementing ML with a high degree of fidelity. In considering improvements, educators may analyze test items to determine frequency of use of higher order cognitive skills, and either redesign grouping procedures or develop appropriate enrichment activities to satisfy the needs of academically talented students.

Carroll County. Carroll County has been implementing ML for one year using a lighthouse strategy. By June 1983, all but one of the nine objectives specified in Table 18 were achieved for pilot teachers and students. Improving student achievement in other subjects besides basic skills was "hoped for."

- Scope and Intensity. After the first year of implementation (June 1983), ML was being implemented in one middle school by two teachers with approximately 160 sixth graders in social studies. The teachers developed and implemented one unit in economics using ML.

- Fidelity. The Carroll teachers implemented ML with a high degree of fidelity. All ML components with the exception of record-keeping were consistently addressed by both teachers.

- Time. Educators spent an average of eight months involved in ML across the 1982-83 school year. Teachers reported spending an average of 3% of their school week across the entire school year on SITIP-related activities. ML required teachers to spend more time preparing students (e.g., grouping, pretesting) and allowed less time for curriculum coverage.

  Central office staff and school administrators spent an average of 6.5 to 7 days on SITIP activities. Central office staff spent slightly less time and energy on ML in comparison to similar previous projects.

- Roles and Responsibilities. Central office staff spent the least amount of time and energy on inservice and evaluation (1.00 for each activity)* and the most amount of time on administration (3.00). School administrators spent no time on materials development and evaluation and spent equal amounts of time on supporting school implementation and dissemination (3.00 for each activity).

  The training was done by developers, MSDE, and central office staff. Assistance was also provided by ML implementers in Howard County. Interactive support received from the five role groups involved in SITIP was perceived by educators as above average with the exception of central office staff who rated developers as below average. Teachers and central office staff received the highest ratings of support. By the beginning of June 1983, at least 75% of the local educators in all three role groups received information about ML. Most of the educators directly involved in the project (one school had received training and help.

- Impact. ML has had an impact on training and on the pilot school, the educators, and the students involved. In the area of training, both pilot teachers reported understanding the model and felt that their teaching ability had improved.

  School-wide impact of ML has been in terms of improved teaching and learning in general and a "carry over" of ML techniques to other subject areas.

  Central office staff felt that involvement with SITIP made them more aware of the importance of reteaching. School administrators felt that SITIP involvement enabled them to learn about a new teaching strategy.

  Ratings of classroom level impact (e.g., ML is a worthwhile, workable instructional model) were positive and were expressed in relation to the use of a structured lesson format with specified objectives.

  Teachers increased their knowledge of the curriculum/program, of the components of effective teaching, and of the learning process. They improved their skills in a new teaching technique, in organization/planning, and in curriculum development.

  Cognitive student impact was perceived to some degree in increased mastery/retention of facts and skills. On three summative tests given during the implementation of the ML unit, mastery levels were achieved (at least 80% of the students achieved 80% correct answers).

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Affective student impact was perceived by educators in terms of enjoyment of the ML process. Educators were less sure about whether ML had an impact on behavior/discipline. On the Student Questionnaire, scores increased (pretest-posttest) on recognition of differences between ML and non-ML classes, enjoyment of lessons, ease of lessons, better grades, and better lessons (slightly).

- Participant Concerns. Carroll educators expressed model-specific concerns (e.g., it is difficult to group students for correctives/extensions; ML requires too much time; ML could hold back academically talented students).

  Changes/recommendations reported by implementers fell into the areas of implementation--preparation (e.g., more preparation time; increase the number of teachers involved in curriculum/unit development), expansion (e.g., increase numbers of teachers, students, schools, subject areas), and external assistance (e.g., MDSE should provide more funds and encourage more inter-county networking).

Factors influencing the relative success of the project included: 1) educators' willingness to learn from other ML SITIP sites, and the willingness of participants at those sites to share ideas and provide assistance (networking); 2) active support from the principal and central office supervisor, as demonstrated in unit development activities, arrangements for site visits to other ML LEAs, and arrangements for release time for teachers to be involved in those activities; and 3) the initial use of time for participants to understand ML fully before developing materials or teaching units. In order to determine the relative value of ML, educators may need to develop enough units for a class of students to experience ML for a complete course or semester. In order to share the perceived benefits of the activities (e.g., curriculum development, professional expertise), educators may want to expand the SITIP team or find ways of including more teachers. In general, Carroll has progressed carefully, seeking after quality of understanding of the model, and application reflecting positive experiences of other sites. Fidelity to SITIP processes and to ML has been high and appears to have been effective for this first year of implementation.

Howard County. Howard County has been implementing ML for two years using a lighthouse strategy. In September 1982, educators "hoped" to improve student achievement in other subjects besides basic skills, and had "partly achieved" the remaining eight objectives specified in Table 18. By June 1983, the eight "partly achieved" objectives had been "achieved." The status of improving student achievement in non-basic skills subjects remained unchanged.

- Scope and Intensity. After the first year of implementation (June 1982), ML was being implemented in one middle school by two teachers in reading/language arts and social studies. By June 1983, nine teachers and 260 students were using ML in reading/language arts, mathematics, science, and social studies.

- Fidelity. Howard educators implemented ML with a high degree of fidelity. The ML components least consistently addressed were matching curricula to objectives and record-keeping. All of the other components were consistently addressed by the teachers. The Howard teachers felt that the "no fault" formative and summative testing, the correctives and extensions, and the ML rationale that every student can succeed were the aspects of ML having the greatest impact on students.

- Time. Educators spent an average of nine months involved in ML across the 1982-83 school year. Teachers reported spending an average of 75% of their school week on SITIP-related activities, during periods when ML units were being implemented.

  ML required teachers to spend more time preparing students (e.g., grouping, pre-testing), but did not take a longer amount of time for curriculum coverage. The school administrator spent an average of 25 days and the central office staff respondent an average of seven days on ML activities. The school administrator reported that ML took substantially more time and energy while the central office person reported substantially less time and effort spent on ML in comparison to similar previous projects. (This reflects the status of project leadership.)

- Roles and Responsibilities. The central office staff perso spent no time on materials development and the most amount of time on dissemination (4.00)*. The school administrators spent the least amount of time on materials development (3.00) and a great deal of time (5.00) on each of the remaining activities specified.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

The teachers received most of their training from MSDE and developers. By the beginning of June 1983, information, training, and help had been received by about 25% of school administrators and teachers at the SITIP site.

- Impact. ML has had an impact on training and on the school, educators, and students involved. In the area of training, teachers reported understanding the model.

  School-wide impact of ML has been in terms of release time for planning, and teacher enthusiasm, with some grass roots expansion to other subject areas and teachers.

  Central office staff and school administrators felt that involvement with ML enabled them to learn about a new teaching strategy.

  Ratings of classroom level impact (e.g., ML is a worthwhile, workable instructional model) were positive. Teachers improved their skills in a new teaching technique, in organization/planning, and in the components of effective teaching. They strengthened their attitudes/perceptions of what students can accomplish and about teaching.

  Cognitive student impact was perceived by educators who said that test scores increased. (For instance where 53% students had been awarded grades of "D" or "E", only 20% received such grades in ML classes. Where students received "D" or "E" on formative tests, only 4% received such grades in summative tests.)

  Affective student impact was perceived by educators in terms of enjoyment, improved attitudes or awareness about their learning ability, about learning and school in general, and improved behavior/discipline.

- Participant Concerns. Howard educators expressed model-specific concerns (e.g., ML requires too much time/effort). Changes/recommendations reported by implementers fell into the areas of involvement (e.g., encourage teachers to increase knowledge and skills) and expansion (e.g., increase number of teachers, students, schools, and subject areas).

Factors influencing the relative success of the project include: 1) implementation in the first year was slow to start and participants shared little with other ML LEAs; 2) there was some misunderstanding of roles and responsibilities; 3) clarification across hierarchical levels and of specific

ML applications helped to focus efforts; 4) some successes (especially in teacher teaming) were experienced, acknowledged, and shared (e.g., with Carroll visitors), and the project gained significance. Educators may need to use ML for a complete course and then determine relative cost-effectiveness (since some participants think ML takes too much time and effort). They may also explore ways to capitalize on the positive impact and possibly include more teachers. Their networking activities appear to have been successful, and opportunities to learn from and share with other LEAs should be taken. In general, Howard appears to have a viable project that still needs nurturing to get it firmly in place.

Worcester County. Worcester has been implementing ML for two years using a lighthouse strategy. In September 1982, educators "hoped" to achieve improved student achievement in other subjects besides basic skill areas and to inform local educators about the topic. "Partly achieved" objectives included training educators to use the model, and improving time-on-task. The remaining four objectives specified in Table 18 were "already achieved." In June 1982, three objectives (improving student achievement in basic skills, helping teachers become better organized, and improving students' involvement in learning) decreased in status from "achieved" to "hoped for" for the first objective and to "partly achieved" for the latter two objectives. The remaining six objectives did not change status from September to June. (Relative achievement of objectives may have remained the same or decreased from September to June since the same objectives may have been addressed but with different classes of students.)

- Scope and Intensity. After the first year of implementation (June 1982), ML was being implemented in one elementary school with five teachers and 100 students in mathematics. By June 1983, four teachers and 75 students from the same school were using ML in mathematics. (The reduction was due to decreased enrollment.)

- Fidelity. Worcester educators implemented ML with a high degree of fidelity. The ML components least consistently addressed by the teachers were the inclusion of higher and lower order thinking skills on tests, and the "no fault" formative test given for each unit. Teachers reported that correctives and extentions, guided practice, and the ML philosophy were the aspects of ML having the greatest impact on students.

- Time. Educators spent an average of 9.5 months involved in SITIP across the 1982-83 school year. Teachers reported spending an average of 14% of their school week on SITIP-related activities. ML required teachers to spend more time preparing students (e.g., grouping, pre-testing) and allowed less time for curriculum coverage than previously used instructional methods.

  School administrators spent an average of 17.5 days and central office staff an average of 15 days on SITIP-related activities.* School administrators and central office staff felt that SITIP required slightly more time and energy than had similar previous projects.

- Roles and Responsibilities. Central office staff and school administrators for ML spent the least amount of time and energy on materials development (3.00 and 1.00, respectively) and the most amount of time on administration (central office--4.00) and evaluation (school administrators--4.50).

  The training was done by developers, MSDE, central office staff, and school-based staff--school administrators and teachers. Interactive support received from the five role groups involved in SITIP was perceived by educators as average and above. Teachers received the highest ratings and school administrators the lowest. By the beginning of June 1983, information had been received by all central office staff and school administrators and by 25% of the teachers. Training and help had been received by 25% of the teachers at the pilot site.

- Impact. ML has had an impact on training and on the system, school, educators, and students involved. In the area of training, 57% of the teachers understood the model and 43% felt they needed to learn more. All of the teachers felt that their teaching ability has improved as a result of ML.

  System-wide impact on ML has been in terms of sharing among educators. A cross-hierarchical steering committee was formed. Members include teachers, the principal, two central office staff, a school board member, and a parent. The chairperson is a school-based administrator (curriculum coordinator). The committee reviews project activities and results and submits requests and recommendations to the central office. School-wide impact has been in terms of teacher enthusiasm, concern for achievement, and the development of simplified, sequenced objectives for mathematics. Teachers team for each grade level to develop daily lesson plans, and the principal monitors implementation.

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* Central office staff were also involved in Student Team Learning.

Central office staff felt that involvement with SITIP gave them a better knowledge of available teaching techniques, while school administrators gained in respect for those educators using ML.

Ratings of classroom level impact (e.g., ML is a worthwhile, workable instructional model) were positive and were expressed in terms of clear teacher expectations, less pressure on students, and the opportunity to relearn -- correctives and extentions.

Teachers increased their knowledge of the curriculum/program and of the components of effective teaching. They improved their skills in a new teaching technique, in organization/planning, in the components of effective teaching, and in assessing and addressing student needs. Teachers also strengthened attitudes/perceptions about teaching

Cognitive student impact was perceived by educators and evidenced in increased mastery/retention of facts and skills and in test scores. On unit summative tests, at least 97% of the students using ML for the entire school year achieved mastery at the 85% level, and on an end of the year comprehensive test at least 97% of these students were achieving mastery with an average score of 96%. Pre and post test scores on the CAT showed significant growth beyond normal predictions, with significantly lower standard deviations.

Affective student impact was perceived by educators in terms of enjoyment and improved attitudes, and awareness of their learning capability and of their strengths and weaknesses.

On the My Class Inventory, students answered as teachers predicted, with high levels of agreement with competitiveness and satisfaction, lower levels on difficulty, and uncertainty about friction.

- Participant Concerns. Worcester educators expressed model-specific concerns (e.g., ML requires too much time/effort; ML holds back academically talented students). Changes/recommendations reported by implementers fell into the areas of implementation--preparation (e.g., increase preparation time), involvement (e.g., have only voluntary participation, compensate teachers for after school planning/training), and expansion (e.g., increase the number of teachers, schools, students, and subjects).

Factors influencing relative success included: 1) time required for planning, disagreement among teachers, and perceived lack of central office support contributed to some teachers' reduction in commitment and reluctance to expand the project; 2) increases in standardized test scores influenced central office staff wish to expand the project, but some teachers did not agree with expansion without additional consistent support and assistance; 3) some teachers felt overwhelmed by the work although an outside consultant was hired to develop materials; 4) assistance (by MSDE and local administrators) was perceived as "spotty--a lot all at once and then nothing at all." Within the pilot school, a great deal of development work has been done and more is planned for ML to spread up through the grade levels. Standardized test data and the perceptions of educators indicate a strong objective value of the program. Various strategies and development efforts (e.g., the "phasing in" of third grade teachers, and the development of an efficient record-keeping system) are providing support for teachers. Beyond the pilot school, there is little evidence of planning for expansion. During the 1983-84 school year, educators may need to review their own experience and determine appropriate strategies if expansion is to occur beyond the pilot school.

Student Team Learning (STL)

As stated in Chapter II, Student Team Learning (STL) is a technique which uses peer tutoring and team competition to facilitate student learning. During 1981-82, eight LEAs (Baltimore County, Calvert, Charles, Montgomery, Prince George's, Queen Anne's, Washington, and Worcester) implemented STL. In 1982-83, one additional county (Dorchester) became involved in STL. This section describes the implementation of STL including: planning, scope and intensity of implementation; time spent on implementing STL; roles and responsibilities of STL implementers; STL impact on school systems, individual schools, educators, and students; and participant concerns.

Planning

The extent of involvement of STL implementers in MSDE-organized planning activities during the 1981-82 school year is summarized below:

> Overall, Baltimore, Queen Anne's, Washington, and Worcester counties were the only LEAs that involved cross-hierarchical teams in at least...two planning activities.... School administrators were more heavily involved in...planning than central office staff and teachers. Central office staff and teachers were fairly equally involved in...planning. (Roberts et al., 1982)

For the 1982-83 school year, MSDE did not organize any group planning activities but provided individual assistance in preparing PEPPS proposals to the "new" LEA. Only one veteran STL LEA changed its original plans: Washington County modified its SITIP plans for 1982-83 so that the leadership role would be assumed by the teacher center and the project would be maintained at 1981-82 levels (i.e., the original goal for scope and intensity would not be achieved).

An analysis of local plans for the 1982-83 school year identified LEA objectives and the status of each at the beginning of September 1982.* Table 30 presents the objectives. In each case, the percent of LEAs that "hoped for," "partly achieved," or "already achieved" each objective is indicated. As can be seen in Table 30, there were nine objectives identified. All nine were addressed to some extent in the participating LEAs. Informing local educators about the model and training educators to use the model were

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* New LEAs were not required to submit information on status of objectives in September 1982.

Table 30

Status of Local Objectives, 1982-83: Student Team Learning

Local Objectives	Status							
	Pre-(Sept. 1982)				Post-(June 1983)			
		Percent of LEAs				Percent of LEAs		
	N	1*	2*	3*	N	1*	2*	3*
1. Improve student achievement (basic skills).	7	43	57	0	6	0	67	33
2. Improve student achievement (other subjects).	4	50	50	0	7	14	72	14
3. Inform local educators about model.	8	25	62	13	7	0	43	57
4. Train educators to use model.	8	25	50	25	8	0	62	38
5. Improve teachers' classroom competence.	6	17	66	17	8	0	62	38
6. Ensure match of instruction, curriculum, and test(s).	4	0	50	50	4	0	50	50
7. Help teachers become better organized.	3	33	67	0	7	0	86	14
8. Improve time-on-task.	2	50	50	0	5	0	60	40
9. Improve students' involvement in learning (motivation).	7	43	43	14	7	0	29	71
10. Other -- dissemination of STL.	1	-	-	-	-	-	-	-
11. Other -- evaluate usefulness of STL as a teaching strategy.	-	-	-	-	1	-	-	-

* 1 = Hoped for
2 = Partly achieved
3 = Achieved

Note. Total number of LEAs equals 9.

the two objectives addressed by the largest number of counties. Improving time-on-task was the least addressed because it is not a component of STL. Five objectives were already achieved by some of the LEAs as of September 1982. The remaining four objectives were either "hoped for" or "partly achieved" by the LEAs addressing those objectives. One LEA specified an additional objective--dissemination of STL.

Scope and Intensity of Implementation

In September 1982, nine counties were involved in STL. Dorchester was just beginning its involvement. As can be seen in Table 31, in June 1982, scope and intensity of implementation varied among the eight "veteran" LEAs from three teachers and 66 students in one junior high/middle school in one county to 21 teachers and 1,500 students across 16 elementary and secondary schools in another county. Across the eight LEAs, approximately 25 schools and 103 teachers in a variety of subject areas were involved in STL.

Table 32 presents the scope and intensity of STL implementation in June 1983.* Across the eight reporting LEAs, a variety of implementation strategies were being used (lighthouse school--3; pilot district--2; capacity building--3). Approximately 113 teachers in 42 elementary and secondary schools were implementing STL. The majority of the LEAs were using STL in the basic subjects of reading/language arts, social studies, mathematics, and science. Three LEAs tried STL in additional subject areas.

The percentage of schools in each reporting county implementing STL as of June 1983 ranged from .6% in Montgomery County to 50% in Dorchester County. Across the entire state, 3% of the schools were involved in STL at the end of the 1982-83 school year.

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* No data available for Prince George's County.

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Table 31

Scope and Intensity, June 1982: Student Team Learning

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Baltimore County	PD	2	E, J/M	7	250	R/LA, M, Sc, SS
Calvert	LS	1	J/M	3	66	R/LA, SS
Charles	LS	1	J/M	17	500	R/LA, M, Sc, SS
Dorchester	New District					
Montgomery	LS	1	J/M	8-9	250	R/LA, M, Sc, O
Prince George's	CB	16	E, J/M, H	21	1,500	R/LA, Sc
Queen Anne's	CB	1	H	23	500	R/LA, M, Sc, SS, O
Washington	CB	2	E, J/M	8	300	R/LA, SS, O
Worcester	CB	1	E	15	302	R/LA, M, Sc, SS, O

Subject Areas:
R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social Studies
O=Other

Strategy:
LS=Lighthouse
PD=Pilot district
DW=District wide
CB=Capacity building

Type:
E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

Table 32

Scope and Intensity, June 1983: Student Team Learning

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Baltimore County	PD	2	E, J/M	9	225	R/LA, M, Sc, SS
Calvert	LS	3	E, J/M	10	300	R/LA, M, SS, O
Charles	LS	10±	E, J/M	17+*	650+*	R/LA, M, Sc, SS
Dorchester	PD	7	E	8	177	SS
Montgomery	LS	1	J/M	10	480	R/LA, M, Sc
Prince George's	No Data					
Queen Anne's	CB	1	H	23	900	R/LA, M, Sc, SS, O
Washington	CB	14	E, J/M, H	20	600	R/LA, SS, O
Worcester	CB	4	E, J/M	16+	400	R/LA, M, Sc, SS

* Pilot middle school only.

Subject Areas:
R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social Studies
O=Other

Type:
E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

Strategy:
LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Some changes occurred between June 1982 and June 1983, the most obvious being the one new LEA. Dorchester decided to use a pilot district strategy in seven elementary schools with eight teachers in social studies. In general, the scope and intensity of implementation increased in the seven "veteran" LEAs between June 1982 and June 1983 (no comparisons can be made for Prince George's County). None of the seven districts changed its implementation strategy. Four LEAs increased in number of schools. There were increases in the number of teachers implementing the model in six LEAs. The number of students involved increased in six LEAs. Subject areas were increased in one LEA.

STL includes four strategies--STAD, TGT, Jigsaw, and TAI. None of the teachers responding to the General Survey (N=62) were using the new strategy, TAI, during the 1982-83 school year. The largest percentage of survey respondents (59.7%) were using STAD, followed by TGT (45.2%) and Jigsaw (24.2%).

Scope and intensity of implementation also includes fidelity--the extent to which teachers implement the model as designed. STL, as designed, requires the implementation of five components or processes which are listed in their order of importance.

1. Each team includes a mix of kinds of students (on given criteria).
2. Materials are available for peer tutoring, team practice, and individual and tournament quizzes.
3. Quiz/tournament scores relate to individual and team achievement.
4. Peer tutoring takes place a great deal.
5. Successes are publicized.

Of the 62 teachers responding to the General Survey, 33% carried out all five components or processes. The process most consistently addressed (by 95% of the teachers) was the most important: each team includes a mix of kinds of students. The process least addressed (76%) was the third most important: quiz/tournament scores relate to individual and team achievement. The remaining three components were addressed by at least 82% of the teachers. Teachers indicated that the most important components (in terms of instructional value) were shared responsibility for and effort toward team success and team recognition. While individual teachers at some sites maintained high fidelity, in general, fidelity across all the LEAs was not as high as expected.

Time Spent on the Model

This section discusses the time spent on STL during the 1982-83 school year. Time across the school year is discussed first, followed by a discussion of the time spent by teachers in the classroom and by school administrators and central office staff.*

Across the school year. During 1981-82, the majority of STL implementers began using the model in September and October 1981 and continued using it through May 1982. However, a few teachers did not begin implementing until April 1982, and in two counties a few teachers had stopped implementing STL as early as February and March 1982.

During the 1982-83 school year, implementers across seven counties were involved in SITIP for an average of 5 months. Implementers in all seven districts were involved for at least 3 months. Queen Anne's and Montgomery counties had the lowest and Baltimore County had the highest average number of months of involvement. Time allocations relate to the units of instruction in which STL is used. In general, a given class of students rarely participated in STL for more than two units during the year (e.g., TGT in the fall for mathematics, Jigsaw in early spring for science).

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* This information is based primarily on the responses of a sample of implementers who completed the General Survey. No survey data were available for Prince George's and Washington counties.

In the classroom. The amount of time STL was used in the classroom during 1981-82 is summarized below:

> Once implementation began, the majority of the teachers (64%) used STL up to 25% of the time and the rest of the teachers used it from 26% to 50% of the time. Only one teacher used it more than 50% of the time. Teachers seemed to be using STL occasionally for certain units or for certain topics within a unit. (Roberts et al., 1982)

In 1982-83, the teachers responding to the General Survey (N=42) indicated that they spent an average of 21% of their school week on STL-related activities. The primary activity for the majority of teachers was classroom implementation. However, some teachers also spent time on planning and/or training. Elementary teachers using STL in one or two subject areas spent an average of 15% of their school week implementing STL. Secondary teachers using STL in their specific subject areas spent a larger percentage (23%) of their school week involved in STL. These time allocations relate to periods when a given unit of instruction incorporated STL.

In general, local educators indicated that STL required teachers to spend more time preparing students (e.g., grouping, pre-testing) and either disagreed or were unsure about whether the curriculum could be covered in a comparatively shorter amount of time using STL. These 1982-83 findings were consistent with the results obtained during the 1981-82 school year.

Time spent by administrators.* Seventeen school administrators and central office staff across the seven LEAs providing survey data spent an average of 9.5 days on SITIP. The average number of days ranged from 26.5 in Worcester to two in Charles. In general, central office staff spent more time on SITIP (17 days) than did school administrators (8 days).

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* No data were available from Queen Anne's County, from central office staff in Calvert, Dorchester, and Montgomery counties, or from school administrators in Charles County. Central office staff in Baltimore, Calvert, Montgomery, and Worcester counties were also involved with other models.

Twenty-four central office staff and school administrators reported spending about the same amount of time and energy on SITIP as they had on similar previous projects. However, central office staff in Calvert and Dorchester counties and school administrators in Baltimore, Charles, and Worcester counties reported that "slightly more" to "substantially more" time and energy had been spent on SITIP, while the school administrator from Montgomery County reported "substantially less." The administrator from Montgomery County reported spending the least amount of time and energy (1.00 on a scale from 1.00 "substantially less" to 5.00 "substantially more"), while administrators from Baltimore and Worcester counties reported spending the most amount of time (4.00). These time allocations reflect the level of effort of classroom implementation.

Roles and Responsibilities

The SITIP design encourages involvement of a cross-hierarchical team, including: 1) central office staff, e.g., supervisors in instruction or coordinators of staff development; 2) school administrators, e.g., principals, vice principals, or department heads; and 3) classroom teachers. This section describes the people involved, what they did, and their relationship to each other from three perspectives: usual assigned roles, activities undertaken, and interactive support.

Usual roles. Teachers, school-based administrators, and central office staff were all involved in STL. Of the nine central office staff responding to the General Survey, two were in staff development, three were in instruction, one was in research and evaluation, and one was in "another" area. Two had multiple responsibilities. Of the 16 school administrators responding to the survey, ten were principals (seven elementary, two junior high/middle, and one no grade level indicated) and six were vice principals (three elementary, two junior high/middle, and one no grade level indicated). In general, STL implementation was carried out about equally by elementary and secondary teachers.

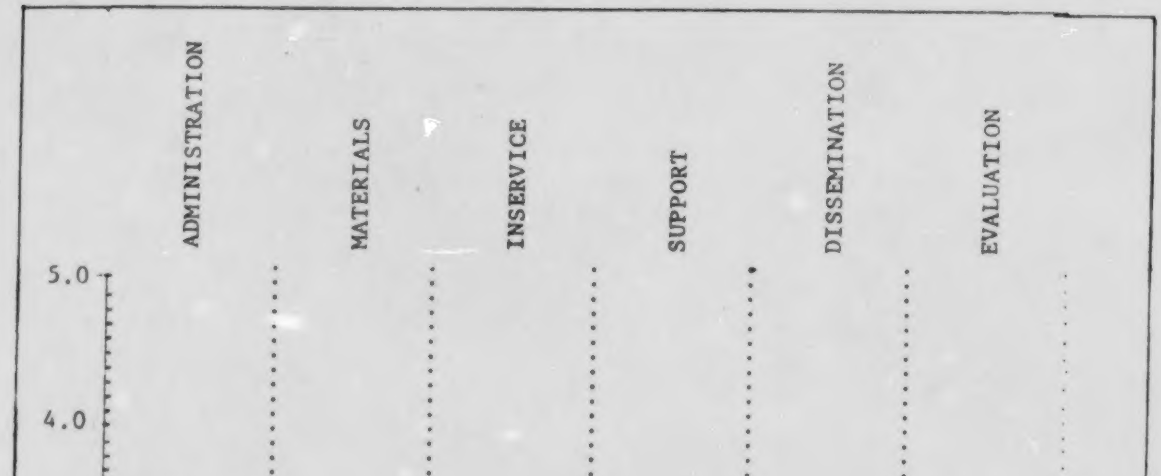
Activities and levels of effort. On the General Survey, six activity areas were identified and central office staff and school administrators from those LEAs responding to the survey were asked to indicate level of effort (time and energy) spent on each (with responses ranging from 0 "none" to 5 "a great deal"). The areas of activity were: 1) administration (including planning and budget); 2) development of materials; 3) designing and/or conducting inservice; 4) supporting school implementation (e.g., problem-solving, supplying materials, etc.); 5) dissemination; and 6) evaluation. (Mean ratings are presented in Table 33.)

The level of effort spent by central office staff and school administrators on each activity during the first year of implementation (1981-82) is summarized below.

> Most effort was spent by central office staff and school administrators on providing support to school staff, followed by administration, and least effort was spent on materials development. Some specific points include:
>
> - In the three capacity-building and one of the pilot/district LEAs, school administrators spent little effort on administration but their central office staff spent much more.
> - Only four respondents (three of whom were central office staff) spent much effort on materials development (a high need for STL).
> - Inservice effort was low for about half the respondents in each role group.
> - Support was fairly high for all respondents, with the exceptions of school administrators in two counties (Washington and Worcester) and two central office staff in Prince George's.
> - Dissemination and evaluation efforts were higher for central office staff than for school staff, with Washington very low in both. (Roberts et al., 1982)

Table 33

Level of Effort: Student Team Learning, 1982-83



As can be seen in Table 33, during the 1982-83 school year school administrators and central office staff combined spent the least amount of time on the development of materials (1.62) and the most time on supporting school implementation (3.04). Central office staff reported spending more time on all areas than did school administrators. Most central office effort was given to administration followed by supporting school implementation and dissemination. School administrators spent most of their time on supporting school implementation followed by dissemination.

Individual county responses indicated that there was some level of effort committed to each activity across all of the LEAs. The greatest amount of effort was given to: administration in two counties (Montgomery and Worcester); materials development in no counties (received least effort in four counties); designing and/or conducting inservices in one county (Charles); supporting school implementation in two counties (Baltimore County and Dorchester); dissemination in two counties (Calvert and Charles); and evaluation in no counties. STL units can only be taught if appropriate materials are available. The lack of investment in materials development suggests that teachers (in 1982-83) used materials developed earlier (some by the developer, and some exchanged among teachers or LEAs).

Interactive support. Teachers implementing STL could receive training/ information from four sources: developers, MSDE, central office staff, and school-based staff (school administrators and teachers). The largest percentage of teachers responding to the survey (N=61) received information and training from school administrators and teachers (62%). The lowest percentage (25%) received training from developers.

All counties received some training from MSDE and STL developers. Also teachers in Baltimore County received their training from other teachers; the majority of teachers from Charles (81%) and Worcester (67%) counties received their training from school administrators and teachers; and in Queen Anne's, 67% of teachers were trained by one or more of the local role groups.

Survey respondents were asked to rate the support received from teachers, principals, central office staff, MSDE, and developers (from 1.00: very poor, to 5.00: excellent). Ratings of interactive support from the 1982 survey are summarized below:

> ...for STL, central office staff were generally the most positive in their assessment (average rating of 4.23). School administrators were also positive in their ratings of support from the three role groups (average rating of 4.14). Teachers were, in general, less positive (average rating of 3.56) in their ratings. Central office staff and school administrators gave the highest rating of support to teachers; teachers gave their highest rating to school administrators. (Roberts et al., 1982)

As shown in Table 34, respondents of the 1983 survey* rated the interactive support received from all five role groups as above average, indicating that each role group was perceived positively by other educators involved in STL in terms of providing information, help, and general support. Developers received the lowest, and teachers and school administrators the highest ratings of support. Central office staff gave the highest ratings while teachers tended to be the least positive in their assessments.

The mean ratings given to the five role groups by the survey respondents in each of the individual counties were all 3.00 (average) and above except in Montgomery County where the school administrator and teachers rated central office staff below average (1.00 and 2.00, respectively).

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* No data were available from central office staff and school administrators in Queen Anne's County.

Table 34

Perceptions of Support Received: Student Team Learning, 1982-83

Respondents	N	Support Groups				
		Teachers	School Administrators	Central Office Staff	MSDE	Developers
Central Office	9	4.62	4.50	4.37	4.44	4.00
School Administrators	17	4.19	4.00	4.23	4.23	3.94
Teachers	60	4.03	4.10	3.63	3.77	3.63
Total	86	4.12	4.12	3.82	3.94	3.72

Mean ratings range from a low of 1.00 (very poor) to a high of 5.00 (excellent).

Impact

This section discusses STL impact on training and on school systems, individual schools, central office staffs, school administrators, teachers, and students.

Training. MSDE TAs held three follow-up training sessions for those counties implementing STL. The first session was a combined follow-up held in the fall of 1982 at MSDE with participants implementing AT and TV. Approximately 18 STL participants were present. During this joint follow-up, the 1982-83 evaluation design was reviewed by RBS, and participants met in small model-specific groups to review plans and to share needs and concerns. The second session was hosted by the pilot school in Charles County, and the third follow-up training session was hosted by schools in Queen Anne's and Worcester counties. Each of the latter two sessions consisted of classroom observations of STL, presentations by the STL developer, and LEA project updates. In the spring session, a presentation on planned change was made by RBS staff.

STL participant evaluations of follow-ups (e.g., clarity, relevancy, and accomplishment of objectives, support from MSDE) were positive, the mean responses ranging from 3.69 to 4.76 on a scale from 1.00 (least positive) to 5.00 (most positive). The majority of the STL participants considered the evaluation overview as the best part of the first session, and the classroom observations were the most popular part of the other sessions. The needs expressed for future TA activities by the STL participants were varied, including requests for help in evaluation, dissemination, planning, and training.

Teachers received information and training from a variety of sources, but mostly from school administrators and teachers. The largest proportion of the teachers indicated that they understood the model (80%) and that their teaching ability had improved as a result of their involvement with STL (50%). Twenty-seven percent felt that their teaching ability had not changed.

As mentioned previously, accurate implementation of the STL model involves five components. Thirty-three percent of the survey respondents indicated that they carried out all six components, and no component was addressed by less than 76% of the teachers. The remaining components were addressed by at least 82% of the teachers. This degree of fidelity was not as high as expected.

School systems. The impact of an innovation on a school system involves changes in practice or policy that affect or could affect more than a single school or single group of educators. Systemic impact included:

- new teaching technique (2 LEAs)
- teacher enthusiasm (1 LEA)
- renewed confidence in county (1 LEA)
- shared experiences with other schools (1 LEA)

These results, while positive, do not indicate strong or lasting systemic changes. STL does not appear to have had an impact on district level policy or practice. This was probably influenced by the implementation strategies used and by the model, which is largely perceived as classroom contained.

Central office staff. STL impacted on central office staff in two ways -- awareness of a new teaching technique (3 LEAs), and awareness of how well students can work together (1 LEA). Neither impact gives any confidence that there were changes in skill or behavior by individual central office staff.

Schools. The impact of an innovation on a single school involved only those educators within that school. STL impact on single schools included:

- teacher and student interest/enthusiasm (4 LEAs), new teaching technique (3 LEAs), cooperation between students and teachers (2 LEAs)
- time to develop curriculum (1 LEA)
- cooperation between educators toward a common goal (2 LEAs), effective, inexpensive, easy to use and to train teachers to use (2 LEAs), networking among schools (1 LEA)
- recognition (3 LEAs)

The first group of results focuses on the model's impact on teachers and students and reflects the nature of STL's emphasis on cooperation. The second item and third group of results focus on the process of implementation and is influenced by the SITIP design and by TA activities. "Recognition" reflects local and state acknowledge, publicity, and opportunity to network with others in SITIP, and is influenced by MSDE initiatives and communication procedures.

School administrators. School administrators felt that their involvement in STL enabled them to learn about a new teaching technique (3 LEAs), to share ideas with other professionals (1 LEA), to become more aware of how well students can work together (1 LEA), and to become more involved with students (1 LEA). Two responses indicate increased knowledge, and two (sharing ideas with professionals and becoming involved with students) are more behavioral. However, none are particularly strong, suggesting again that STL is classroom centered.

Classrooms and teachers. Impact on teachers fell into eight categories under the three general areas of: (1) increased knowledge, (2) improved skills, and (3) strengthened attitudes/perceptions. (See Table 35.) In addition, survey respondents assessed relative instructional value and impact on teachers in six areas, on a five-point Likert scale. (See Table 36.)

Improved skills in a new teaching technique was the teacher impact category reported by all role groups across the largest number of LEAs. As can be seen in Table 35, survey respondents generally indicated that STL was a worthwhile, workable model, with mean responses ranging from 4.18 to 4.43 (on a scale from 1.00 least positive, to 5.00 most positive). They also believed that teachers enjoyed STL and increased their knowledge and skills (mean responses ranged from 4.06 to 4.17). However, these responses were not as high as the responses given for classroom impact. Teachers were consistently lower than the other role groups in their ratings of teacher impact and instructional value.

Students. The impacts of STL on students fell into 13 categories under the three general areas of : (1) improved attitudes or awareness, (2) increased achievement, and (3) benefits from better instructions (See Table 37.) Also, LEAs were asked to submit data summaries of cognitive and affective measures assessing STL's impact in terms of student achievement and attitudes. The results of these measures are also summarized in this section.

Improved attitudes about learning and school (e.g., increased interest, cooperation, involvement, enthusiasm, motivation) was the most commonly reported category of student impact across all three role groups. As can be seen in Table 36, survey respondents generally felt that students enjoyed STL (4.37), that they were learning and achieving more (3.60 and 3.76, respectively), and that their behavior was somewhat better/less disruptive (3.57 and 3.65, respectively). Teachers tended to be lower in their ratings of student impact than other educators.

Table 35

Impact on Teachers as Reported by Each Role Group: Student Team Learning, 1982-83

Impact on Teachers	Role Groups (Reported in No. of LEAs; N=9) CO	SA	T
As a result of STL teachers have:			
Increased knowledge			
- about teaching and learning through staff development/observation.	0	1	2
Improved skills			
- in a new teaching technique.	3	5	7
- in classroom management/organization, planning	0	3	4
- in use of peer teaching	0	1	0
- in working with students (e.g., motivation).	0	0	4
- in assessing student progress/needs.	2	2	4
Strengthened attitudes/perceptions			
- of how well students can work together.	0	2	4
- about teaching (e.g., involvement, cooperation, sharing, satisfaction, recognition, and self esteem).	2	1	6

CO=Central Office; SA=School Administrators; T=Teachers

Table 36

Instructional Impact as Perceived by
Survey Respondents: Student Team Learning, 1982-83

Impact on Instruction	Role Groups			
	CO N=9	SA N=17	T N=63	Total N=89
Instructional Value				
Works in classroom.	4.67	4.75	4.30	4.42
Is worth the work it takes.	4.33	4.35	4.11	4.18
Is a worthwhile teaching approach.	4.67	4.76	4.30	4.43
Impact on Teachers				
Teachers enjoy it.	4.33	4.44	4.08	4.17
Teachers have increased knowledge.	4.44	4.37	4.03	4.14
Teachers have increased skills.	4.44	4.50	3.89	4.06
Impact on Students				
Students enjoy it.	4.67	4.75	4.23	4.37
Students are less disruptive.	3.89	4.25	3.46	3.65
Students' achievement has increased.	3.50	3.94	3.75	3.76
Students are learning more.	3.56	4.00	3.51	3.60
Students' general behavior is better.	3.78	3.00	3.44	3.57
Time				
Teachers spend more time preparing students.	3.78	3.56	4.05	3.93
Teachers cover curriculum in less time.	2.56	2.81	2.49	2.56

Mean ratings range from 1.00 (strongly disagree) to 5.00 (strongly agree).
CO=Central Office; SA=School Administrators; T=Teachers

Table 37

Impact on Students as Reported by Each Role Group:
Student Team Learning, 1982-83

Impact on Students	Role Groups (Reported in No. of LEAs; N=9)		
	CO	SA	T
As a result of STL, students have:			
Improved attitudes or awareness			
- about their learning ability (e.g., increased confidence, higher expectations, success).	1	1	2
- about learning and school (e.g., increased interest, cooperation, involvement, enthusiasm, motivation).	6	7	8
Increased achievement			
- in retention of information.	2	2	3
- in grades.	3	3	4
- in test scores.	2	3	4
- in general.	0	1	2
- especially for under achievers/lower ability.	0	0	2
Benefitted from better instruction which provides			
- variety.	1	1	1
- peer tutoring/working in groups.	1	0	3
- competition.	0	0	1
- more complete instruction.	0	0	1
- recognition of success.	1	1	1
- opportunity to advance.	0	0	1

CO=Central Office; SA=School Administrators; T=Teachers

Affective measures of student impact were submitted by four of the nine LEAs (see Tables 38 and 39).* Baltimore, Dorchester, and Worcester counties administered the Student Questionnaire to students at the end of the implementation period as a posttest. The questionnaire consists of seven questions or dimensions (i.e., recognition of differences, understanding of lesson, enjoyment of lesson, ease of lesson, learning of lesson, better grades, better lessons). Respondents answer using a five-point scale ranging from 1.00 (not at all) to 5.00 (yes a lot). The higher the score, the higher the agreement with the dimension being measured. There are elementary and secondary versions of the questionnaire.

As can be seen in Table 38, mean responses averaged across the three LEAs ranged from a low of 3.78 (better grades) to a high of 4.65 (understanding of lesson). An examination of results within the three LEAs indicated that all mean responses in Worcester County were between 4.03 and 5.00, inclusive. Mean responses in Baltimore and Dorchester counties were somewhat lower, ranging from 3.67 to 4.74.

Charles County administered the Learning Environment Inventory (LEI) to 100 students (50 STL and 50 control students) at Henson Middle School at the end of the implementation period (post). The LEI contains 105 items measuring 15 dimensions. Eight dimensions were relevant for assessing model impact on student attitudes. Each is defined below:

- Competitiveness--Students compete to see who can do the best work.
- Satisfaction--Students enjoy their class work.
- Difficulty--The work of the class is difficult.

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* Montgomery, Prince George's, Queen Anne's, and Washington counties did not provide affective data. Calvert County submitted a brief report summarizing teachers' perceptions of student attitudes.

Table 38

Student Attitudes (Student Questionnaire): Student Team Learning, 1982-83

LEAs	Baltimore County				Dorchester County				Worcester County				Total	
	Gr.3-Post		Gr.5-8-Post		Gr. 3-Post		Gr. 4-5-Post		Gr. 1-Post		Gr. 2-Post			
Dimensions	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
1. Recognition of differences.	27	4.04	165	3.82	182	4.68	595	4.36	35	4.54	17	5.00	1021	4.34
2. Understanding of lesson.	27	4.93	167	4.60	182	4.66	644	4.66	35	4.26	17	4.71	1072	4.65
3. Enjoyment of lesson.	27	4.59	183	4.32	168	4.31	625	4.52	35	4.43	17	4.76	1055	4.45
4. Ease of lesson.	27	4.44	167	4.04	159	3.92	503	3.68	35	4.03	17	4.76	908	3.84
5. Learning of lesson.	27	4.44	177	3.97	174	4.43	584	4.26	34	4.56	17	4.65	1013	4.26
6. Better grades.	27	4.07	172	3.70	152	3.95	497	3.67	35	4.43	17	4.71	900	3.78
7. Better lessons.	27	4.74	171	4.11	161	4.16	593	4.30	35	4.37	17	4.41	1004	4.26

Mean responses range from 1.00 (not at all) to 5.00 (yes a lot). The higher the score, the higher the agreement with the dimension measured.

- Friction--There are tensions amoung certain groups of students that tend to interfere with class activities
- Disorganization--The class is disorganized.
- Apathy--Failure of the class would mean little to individual members.
- Favoritism--Certain students are favored more than the rest.
- Environment--The books and equipment students need or want are easily available to them in the classroom.

Students responded to items using a four-point scale ranging from 1.00 (strongly disagree) to 4.00 (strongly agree). The higher the score, the higher the agreement with the dimension being measured. High agreement is desirable for satisfaction and environment; for all other dimensions (except competitiveness) low scores are desirable. Competition may or may not be considered desirable depending on the philosophy of the school. As can be seen in Table 39, mean responses for STL students ranged from 2.21 (favoritism) to 2.82 (environment). Mean responses for control students ranged from 2.48 (satisfaction and disorganization) to 2.80 (environment).

A comparison of Charles County responses with the national test norms of satisfaction and environment, where high agreement (higher scores) is desirable, revealed that both STL and control responses were higher than test norms. Mean STL responses were found to be slightly higher than control responses on these dimensions. Of the remaining dimensions (except competitiveness) where lower scores are desirable, mean responses were lower than national norms for both STL and control students on difficulty and apathy. On "apathy," the STL mean response was lower than the control mean response. On difficulty, the control mean response was slightly lower than the STL mean response. On friction, disorganization, and favoritism, however, STL and control mean scores were higher than the national norms. On all three of

Table 39

Student Attitudes (Learning Environment Inventory): Student Team Learning, 1982-83

Mean Scores for Charles County

Populations	National Test Norms	STL	Control
Dimensions*	$\bar{X}$	$\bar{X}$ N=50	$\bar{X}$ N=50
1. Competitiveness	2.43	2.58	2.51
2. Satisfaction	2.40	2.56	2.48
3. Difficulty	2.67	2.55	2.51
4. Friction	2.40	2.66	2.74
5. Disorganization	2.35	2.37	2.48
6. Apathy	2.54	2.47	2.51
7. Favoritism	2.03	2.21	2.54
8. Environment	2.40	2.82	2.80

LEI - Mean responses ranged from 1.00 (strongly disagree) to 4.00 (strongly agree). The higher the score, the higher the agreement with the dimension measured.
Test norms were based on 1048 subjects in 65 classes in a variety of subject areas during 1969.

* Higher scores are desirable for satisfaction and environment; for all other dimensions except competitiveness, low scores are desirable. Competitiveness may or may not be considered desirable depending upon the philosophy of the school.

these dimensions, STL mean scores were lower than control mean scores. These results indicate that STL appears to have had a positive affective impact on students.

Calvert County, which did not submit any of the standardized affective measures of student impact, did return a summary statement compiled by two teachers using the STL strategy at one middle school. Their report concluded, "As a result of the Student Team Learning strategy, an increase was shown in student...behavior and self-esteem."

Cognitive measures of student impact were submitted by three out of the nine LEAs implementing Student Team Learning: Charles, Dorchester, and Montgomery counties.*

Charles County reported student grades on teacher-made criterion-referenced tests in the following subject areas: math, science, language arts, and social studies. These tests evaluated student achievement after completion of a two to five week unit of study in the specified subject area. Table 40 reports percentages of students with grades of "C" or above for students exposed to the STL technique (experimental group) as well as students in non-STL (control group) classes. In five out of eight STL classes, a higher percentage of STL students earned grades of "C" and above than the percentage of students in non-STL classes. Of special interest is the fact that below average STL students consistently demonstrated higher grades than below average or average non-STL students. This provides additional support for the notion that STL is particularly effective for below average students.

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* While CAT scores for the STL students in Montgomery Village Jr. High for October 1982 were submitted by [illegible]gomery County, they are not discussed here since no related data (e.g., post scores, trend analysis) were provided.

Table 40

Grades on Criterion-Referenced Tests: Charles County, Student Team Learning, 1982-83

	"C" and Above %	Below "C" %
6th Grade Math		
STL (Avg.)	70	30
Control (Avg.)	72	28
6th Grade Math		
STL (Avg.-)	92	8
Control (Avg.-)	82	18
8th Grade Math		
STL (Avg.-)	92	8
Control (Avg.)	71	29
8th Grade Math		
STL (Avg.-)	85	15
Control (Avg.)	83	17
7th Grade Science		
STL (Mix)	73	27
Control (Mix)	79	21
8th Grade Language Arts		
STL (Avg.)	97	3
Control (Avg.+)	100	0
6th Grade Social Studies		
STL (Mix)	89	11
Control (Mix)	81	19
6th Grade Social Studies		
STL (Avg.)	100	0
Control (Avg.)	80	20

Student Ability Grouping

Avg.+ = Above average
Avg.- = Below average
Avg.= Average
Mix = Heterogenous

Dorchester County also reported student grades on a teacher-made criterion-referenced social studies test. Two fifth grade classes were pre- and posttested on the teacher made test. One class was exposed to the STL Jigsaw approach (experimental) for one month at the end of the year. The other class was provided instruction in a regular teacher directed manner (control). Table 41 presents the percentage of students scoring "C" or above on each of the tests.

Table 41

Grades on a Criterion-Referenced Test: Dorchester County, Student Team Learning, 1982-83

	STL class % "C" or above	Control class % "C" or above
Pretest	47%	42%
Posttest	90%	69%

The results presented in the table above indicate that both classes were fairly equal at the time of the pretest. However, at the time of the posttest, 90% of the STL students scored "C" or better compared with only 69% of the control class students. STL students earned higher grades than students instructed in the regular teacher directed manner.

Direct "cause and effect" claims for STL impact on student achievement cannot be made on the basis of the above data or on the test designs used. However, for two of the LEAs reporting cognitive data, many students have mastered the material and this can be attributed in part to STL.

Participant Concerns

Chart 6 lists the concerns reported by STL implementers. All of the concerns were model specific and were related to the amount of time required, the scoring system, the model's effectiveness with different kinds of students, discipline, and the availability of materials. The largest number of LEAs reported time concerns.

Chart 7 lists the recommendations/solutions reported by STL implementers. These recommendations were divided into four general areas: implementation/preparation, involvement, expansion, and external assistance. The largest number of LEAs made recommendations in the areas of implementation/preparation and expansion. Very few of the recommendations were solutions for the concerns stated. Six out of the nine STL LEAs recommended expansion even though educators within those LEAs expressed concerns about the model.

Summary and Conclusions

In the preceding pages each research question or issue has been addressed and the findings have been discussed across LEAs. Here, some general conclusions across issues and LEAs are reviewed. Then, activities are summarized for each LEA.*

It is apparent that STL is perceived as a classroom-focused teaching strategy that individual teachers can implement easily once they have received training and have obtained or developed suitable materials. "Successful" teachers, familiar with their courses, students, and the STL strategies, used

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* Levels of information vary because some LEAs provided more documentation or other evidence of model implementation.

Chart 6

Concerns/Problems Reported: Student Team Learning, 1982-83

Requires too much time/effort -- planning/preparation/scoring (4)
Requires too much time/energy -- in general (3)
Requires too much paperwork (2)

Don't like scoring system -- bumping (TGT), improvement point system (STAD) (2)
Difficulty in measuring achievement (1)

Holds back academically talented (2)
Weaker students depend on stronger ones (1)
Hard for remedial students to stay on task (1)
How to handle absentees (1)

Discipline -- tendency to "goof off", less teacher control, increased noise levels (2)

Availability of material correlated to county curriculum (1)

* Figures in parenthesis indicate the number of LEAs making a given statement.

Chart 7

Recommendations/Solutions: Student Team Learning, 1982-83*

Implementation/preparation

Allow more time for classroom observations (1)
Provide bulletin boards for publicizing team scores (1)
Provide more workshops on unit development (1)
provide more opportunity for unit preparation (1)
Reduce burden on teachers (2)
Use earlier in year (1)
Make research results available to educators before implementation (1)

Involvement

Have only voluntary participation (2)
Encourage teachers to increase their knowledge and skills (1)

Expansion

Use by all instructors (1)
Increase numbers involved (5)
District provision of follow-up assistance (1)

External assistance

MSDE should - develop materials for business education (1)
- provide continued support (1)
- provide more funding for materials and dissemination (1)

* Figures in parenthesis indicate the number of LEAs making a given statement.

one or two units with high fidelity (quality rather than quantity of implementation). Its subjective value was high: teachers liked using at least one of the three approaches offered, and administrators approved of teachers having access to a model like STL.

Impact was made on student achievement in specific units of instruction where teachers had suitable materials and paid attention to implementing all relevant components faithfully. Casual grouping of students or use of STL for units that did not readily fit STL guidelines result in little impact difference from "regular" instruction. However, student attitudes about the lessons, their self-esteem, and willingness to work with others increased during implementation of STL.

Impact was made on teachers' knowledge (of strategies) through training, and on skills and attitudes through trial implementation. Early successes encouraged further use (of a given unit or set of materials). However, most teachers using STL properly did so for only one or two units a year--partly because of the demands of pretesting for grouping and partly because suitable materials were not available for more units (and there appears to be no release time for development).

Impact was made on a school when the principal actively encouraged many teachers to use at least one STL strategy. School and central office impact was primarily awareness of STL strategies and of the benefits of peer learning for students. While interaction through training encouraged cooperation, apparently there were no systemic effects.

The strategies to provide interactive support (within a given LEA) were important, but less so than for the other three SITIP models. This reflected the fact that all nine LEAs (regardless of the implementation strategy stated in their plans) essentially expected teachers to use STL voluntarily once they were trained. Positive impact (fidelity and scope of use by an enthusiastic teacher) was made when quality training was provided and was directly supported by suitable materials (or development time) and follow-up, on-site assistance and recognition; when central office staff clearly communicated their interest in the success of STL and made sure that resources were available to carry out plans; and when principals expected and acknowledged fidelity implementation. Positive impact was reduced or barriers created when: initial plans were overly ambitious; project leaders did not carry out key steps of their plans; there were not enough local trainers or teachers as trainers could not spend enough time in that role; there was heavy reliance on training alone, without provision for on-site help as teachers began trial runs; teachers, left alone, modified STL components or developed materials which did not reflect STL philosophy and therefore did not achieve expected results; and when communication between "levels" (especially from central office) was unclear or delayed.

In the following case reports of the nine LEAs implementing STL, attention is given to the influential factors mentioned above and also to specific objectives and results achieved at each site.

Baltimore County. Baltimore County has been implementing STL for two years using a pilot district strategy. In September 1982, those involved in the project "hoped" to inform and train local educators and had "partly achieved" their dissemination plans for the 1982-83 school year. In June 1983, educators had "partly achieved" their information/training objective. The status of the 1982-83 dissemination plans was not specified. In addition to the three objectives mentioned in September, educators in June had "achieved" improvement in students' involvement in learning and had "partly achieved" the remaining five objectives specified in Table 30. A new objective, evaluating the usefulness of STL as a teaching strategy had also been "partly achieved".

- Scope and intensity. After the first year of STL implementation (June 1982), STL was being implemented in one elementary and one middle school with approximately seven teachers and 250 students in reading/language arts, mathematics, science, and social studies. Little changed in the 1982-83 school year. Student Team Achievement Divisions (STAD) was the most popular STL strategy.

- Fidelity. In Baltimore County the survey respondent addressed all components of the STL model. He/she felt that shared responsibility for and effort toward team success, the cooperation among team members, and peer tutoring were the aspects of STL having the greatest impact on students.

- Time. Educators spent an average of 9 months involved in SITIP, across the 1982-83 school year. Teachers reported spending an average of 10% of their school week on STL-related activities. School administrators and central office staff reported that STL required teachers to spend more time preparing students (e.g., grouping, pre-testing) but teachers disagreed. All role groups reported that curriculum coverage took longer for STL.

  School administrators spent an average of 10 days and central office staff* spent an average of 35 days on SITIP. School administrators reported that SITIP took "substantially more" time and energy while central office staff report "about the same" amount of time and energy compared to similar previous projects.

- Roles and responsibilities. School administrators and central office staff combined spent the least amount of time and energy on evaluation (2.00)** and the most effort on supporting school implementation (4.50). School administrators devoted the least effort to administration and evaluation (1.00) and the most to supporting school implementation and dissemination (5.00). Central office staff spent "some" time and energy (3.00) on materials development, dissemination, and evaluation and "quite a lot" of effort on administration, inservice, and supporting school implementation.

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* Central office staff were also involved in another model.

** Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Teachers reported that most of the training was done by developers. Educators rated the interactive support received by the five role groups involved in STL as good to excellent. Developers received the lowest ratings and teachers the highest. By June 1983, information related to STL had been received by about 12% of the central office staff and by 25% of the other educators in the district. Training and help had been received by none of the central office staff and by about 12% of the school administrators and teachers. Other faculty had received some training (12%), but no help.

- Impact. STL has had an impact on training and on the schools, educators, and students involved. In the area of training, teachers felt they know a great deal about the model.

  An example of school-wide impact is the use of STL to integrate and orient new sixth graders into the middle school. School administrators felt that STL involvement enabled them to share ideas with other educators.

  Educators indicated that STL has had an impact at the classroom level (e.g., STL is a worthwhile, workable instructional model). The classroom impact of STL was related to the use of peer tutoring, competition, more complete instruction, recognition of success, opportunity to advance, and variety. Teachers improved their skills in a new teaching technique and strengthened their attitudes/perceptions about teaching.

  Increased student achievement was perceived by educators and evidenced in better retention of information, in grades, and in test scores.

  Affective student impact was also perceived by educators and evidenced in better/less disruptive behavior, improved attitudes about learning and school, and positive responses on the seven dimensions of the Student Questionnaire (i.e., recognition of differences, understanding of lessons, enjoyment of lessons, ease of lessons, learning of lessons, better grades, and better lessons).

- Participant Concerns. Educators felt that STL could hold back the academically talented and that the bumping system in TGT could could damage student self-esteem. Expansion was recommended for the 1983-84 school year, however.

Factors influencing the relative success of STL included: 1) central office support, which was good, although it was somewhat reduced toward the end of the year when policy decisions resulted in greater attention to another SITIP model (mastery learning) in the county; 2) some initial lack of focused energy due to organizational changes in the school; 3) strong teacher interest and approval of STL as a set of useful teaching techniques. Together, these factors suggest that teachers will continue to use STL at the pilot sites, but will probably need some recognition (at least by school based administrators) of their efforts. If STL is to expand, more central office support will be needed. Educators may wish to review which of the STL strategies is most appropriate for a given subject or unit and grasp of students, and consider trying alternative strategies.

Calvert County. Calvert has been implementing STL for two years using a lighthouse school strategy. In September 1982, educators had "partly achieved" three of the nine objectives specified in Table 30 (i,e., informing local educators about the model, training local educators to use the model, and ensuring a match between instruction, curriculum, and tests). The remaining six objectives were "hoped for." In June 1983, two objectives were "achieved" (i.e., improving teachers' classroom competence and insuring curriculum alignment), one was still "hoped for" (i.e., improving student achievement in other subjects), one was not given a status (improving time-on-task) and the remaining five were "partly achieved."

- Scope and intensity. After the first year of STL implementation (June 1982), STL was being implemented in one middle school by three teachers with 66 students in reading/language arts and social studies. By June 1983, two elementary schools were also involved. Ten teachers and 300 students were using STL in a variety of subject areas. Student Team-Achievement Divisions (STAD) and Teams-Games-Tournaments (TGT) were the most popular STL strategies.

- Fidelity. The STL components least consistently addressed by the teachers were relating quiz/tournament scores to individual and team achievement and using peer tutoring. Most of the teachers felt that the competition and shared responsibility for team success were the aspects of STL having the greatest impact on students.

- Time. Educators spent an average of 9 months involved in STL across the 1982-83 school year. Teachers reported spending an average of 19% of their school week on STL-related activities. STL required teachers to spend more time preparing students (e.g., grouping, pre-testing) and allowed less time for curriculum coverage.

  School administrators spent an average of 12 days on SITIP. They felt that SITIP took about the same amount of time and energy as similar previous projects while central office staff reported "slightly more."

- Roles and Responsibilities. School administrators and central office staff combined spent the least time and energy on materials development (2.60)* and the most on dissemination (3.80). School administrators spent the least time on administration and materials development (2.50) and the most effort on dissemination (3.50). Central office staff spent most of their time on administration and supporting school implementation and dissemination (5.00), and the least time on materials development (3.00).

  Most of the training came from the developer and from school staff (teachers and principals). Educators rated the interactive support received from the five role groups involved in SITIP as above average. Central office staff received the lowest and teachers and school administrators received the highest rating of support. By the beginning of June 1983, information on STL had been received by 75% of the central office staff, 50% of the school administrators, and 25% of all other faculty. Training and help had been received by 25% of central office staff, school administrators, and teachers.

- Impact. STL has had an impact on training and on the schools, educators, and students involved. In the area of training, teachers felt that they understood the model and that their teaching ability had improved as a result of their involvement with STL.

  The schools involved in STL have benefitted from the increased cooperation between students and teachers.

  Central office staff and school administrators felt that involvement with the SITIP project enabled them to learn about a new teaching technique. School administrators also became more involved with the students.

  Educators indicated that STL has had an impact at the classroom level (e.g., STL is a worthwhile, workable instructional model). They felt that STL helped provide variety to the instructional routine.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Teachers increased their knowledge about teaching and learning and improved their skills in a new teaching technique and in classroom management/organization/planning. They strengthened their attitudes/perceptions of how well students can work together and about teaching.

Increased student achievement was perceived by educators and evidenced in test scores.

Affective student impact was perceived in terms of better, less disruptive behavior and improved attitudes about learning and school.

- Participant Concerns. Educators felt that STL required too much paper work. Suggested changes/recommendations included encouraging teachers to increase their knowledge and skills, and expansion to other classes or schools.

Factors influencing relative success of the project include: 1) the interest and support of school-based administrators, and 2) the value of STL as perceived by teachers. Staff changes at the central office do not appear to have had a negative impact on the project, since school staff carried out most of the necessary tasks. The availability of STL developers was helpful in training teachers in the elementary "feeder" schools. Educators may wish to decide if the project is district wide or school based and then make expansion plans with appropriate support.

Charles County. Charles has been implementing STL for two years using a lighthouse school strategy. In September 1982, educators "hoped" to achieve five of the nine objectives specified in Table 30 (i.e., improving student achievement in basic skills, informing local educators about the model, training local educators to use the model, improving teachers' classroom competence, and improving students' involvement in learning). In June 1983, two of these objectives (improving teachers' classroom competence and improving students' involvement in learning) were "partly achieved" and the other three were "achieved". One additional objective not specified in September (helping teachers become better organized) was "partly achieved" in June.

- Scope and intensity. After the first year of STL implementation (June 1982), STL was being implemented in one middle school with 17 teachers and 500 students in reading/language arts, mathematics, science, and social studies. In June 1983, over 10 elementary and junior/middle schools were involved as teachers voluntarily implemented STL following local inservice. Student Team-Achievement Division (STAD) and Teams-Games-Tournaments (TGT) were the most popular STL strategies.

- Fidelity. The STL component most consistently addressed by the teachers was: "quiz/tournament scores related to individual and team achievement." The components least addressed were peer tutoring and use of appropriate materials. Most of the teachers felt that team recognition was the aspect of STL having the greatest impact on students.

- Time. Educators spent an average of 6 months involved in STL across the 1982-83 school year. Teachers reported spending an average of 26% of their school week on STL-related activities. STL required teachers to spend slightly more time preparing students (e.g., grouping, pre-testing). Educators were unsure whether STL allowed more time for curriculum coverage.

  Central office staff spent an average of two days on STL. School administrators reported that STL took "slightly more" time and energy while central office reported "about the same" amount of effort on STL in comparison to similar previous projects.

- Roles and responsibilities. School administrators and central office staff combined spent the least time and energy on materials development (1.33)* and the most effort on inservice and dissemination (3.67). Central office staff spent "very little" time on materials development (1.50) and "quite a lot" of energy on inservices and dissemination (4.00). School administrators also spent little of their time on materials development (1.00), and the most amount of time on administration (4.00).

  Most of the training was done by school administrators and teachers, although some teachers received information/training from developers, MSDE, and central office staff.

  A team of four teachers is in charge of staff development, which consists of an awareness session, six-hours of inservice, and follow-up by the team members. At the pilot middle school, department heads serve as resource people. Educators gave the highest interactive support to teachers and school administrators (4.26 and 4.21 -- good to excellent). All role groups received above average ratings. MSDE and central office staff received the lowest ratings. By the beginning of

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

June 1983, all school administrators, 75% of the central office staff, and 50% of the teachers had received information about STL. Training had been received by 75% of the central office staff and 50% of the teachers and school administrators (all schools have at least one teacher trained). Help has been received by 25% of the educators involved.

- Impact. STL has had an impact on training, on the district in general, and on the schools, educators, and students involved. In the area of training, all of the teachers indicated that they understood the model and several felt that their teaching ability had improved as a result of their involvement.

  The schools have benefitted in terms of increased cooperation and enthusiasm among teachers and students, recognition, and an effective, inexpensive staff development program. Central office staff felt that STL involvement enabled them to learn a new teaching strategy.

  Classroom level impact (e.g. STL is a worthwhile, workable instructional model) was perceived by educators and has been attributed to some extent to the use of peer tutoring.

  Teachers increased their knowledge about teaching and learning and improved their skills in a new teaching technique, in classroom management/organization/planning, in working with students, and in assessing student progress/needs. They have strengthened their attitudes/perceptions of how well students can work together and about teaching.

  Increased student achievement was perceived by educators and evidenced in grades on teacher made criterion-referenced tests. In five out of eight STL classes, a higher percentage of STL students earned grades of "C" and above than non-STL students. Increases in student achievement were especially evident for below average students using STL.

  Affective student impact was perceived in terms of improved attitudes about their learning capabilities and about learning and school in general. Educators were not sure about whether behavior/discipline had improved. On the LEI, STL students had higher scores than control students on competitiveness, satisfaction, difficulty, and environment and lower scores on friction, disorganization, apathy, and favoritism.

- Participant Concerns. Educators felt that STL required too much paperwork and too much time/effort on planning and preparation. One teacher did not like the STAD scoring system. Other concerns included the lack of materials correlated to the county's curriculum, the difficulty which remedial students had in order to stay on task, how to handle absentees, and the increased noise levels and reduced teacher control during STL classes. Suggested changes/recommendations fell into the categories of implementation--preparation (e.g., increase the numbers involved and provide follow-up assistance).

Factors influencing relative success of the project include: 1) the strong leadership and support of the principal, 2) the teacher-based training and related activities to involve educators beyond the pilot school, 3) the value of STL as perceived by teachers, and 4) evidence (grades and student surveys) that students benefit from STL. However, as attention focused on expansion through training, some model-specific concerns arose which educators may need to address for some classes.

Dorchester County. Dorchester has been implementing STL for one year using a pilot district strategy. By June 1983, educators had "partly achieved" improvement of student achievement and had "achieved" four additional objectives (informing local educators, training educators to use the model, improving teachers' classroom competence, and improving time-on-task).

- Scope and intensity. After the first year of implementation (June 1983), STL was being implemented in all seven elementary schools by eight teachers and 177 students in social studies. Jigsaw was the most popular STL strategy.
- Fidelity. The STL components most consistently addressed by teachers were the mix of students on each team and the extensive use of peer tutoring. The component least addressed was "quiz/tournament scores relate to individual and team achievement." The largest number of teachers indicated that shared responsibility for team success was the aspect of STL having the greatest impact on students.
- Time. Educators spent an average of 4 months involved in STL across the 1982-83 school year. Teachers reported spending an average of 14% of their school week on STL-related activities. STL required teachers to spend slightly more time preparing students (e.g., grouping, pretesting). Educators were unsure whether STL allowed more time for curriculum coverage.

  School administrators spent an average of three days on STL. Central office staff reported that STL took "substantially more" time and energy, while school administrators reported "about the same" level of effort spent on STL in comparison to similar previous projects.

- *Roles and responsibilities*. School administrators and central office staff combined spent the most time and energy on supporting school implementation (2.44)* and the least effort on administration and dissemination (.75). Central office staff spent the most effort on materials development (4.00) and the least effort on dissemination (1.00). School administrators spent most of their time supporting school implementation (2.37) and the least time on administration (.43).

  Most of the training was done by MSDE and central office staff although some teachers were trained or received information from the developer and from school administrators and teachers. Educators rated the interactive support received from these role groups as above average. Central office staff received the highest ratings, and developers and teachers the lowest. By the beginning of June 1983, *information* about STL had been received by all *school administrators*, by 75% of the central office staff, and by 25% of the teachers. *Training* had been given to 25% of the central office staff and teachers and by less than 25% of the school administrators. *Help* had been given to 25% of the teachers.

- *Impact*. STL has had an impact on training, on the school system, and on the schools, educators, and students involved. In the area of *training*, the majority of the teachers reported that they understood the model and that their teaching ability had improved as a result of their involvement fifty percent of the teachers felt they needed to learn more about STL.

  The *school system* benefitted from teacher enthusiasm. At the *school level*, educators and students benefitted from a new teaching technique, increased networking among educators, and teacher and student enthusiasm.

  Central office staff and school administrators felt that involvement in SITIP made them more aware of how well students can work together.

  Educators indicated that STL has had an impact at the *classroom level* (e.g., STL is a worthwhile, workable instructional model). *Teachers* improved their skills in a new teaching technique, in the use of peer tutoring, and in working with students. They strengthened their attitudes/perceptions of how well students can work together and about teaching.

  Educators were unsure as to whether STL had increased *student achievement* since teachers implemented the model for only a short period of time. A significantly higher percentage of fifth grade students scored a "C" or above on a teacher-made criterion-referenced test than a comparable group of students not using STL.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Affective student impact was perceived by educators in terms of improved attitudes about learning and school, and by somewhat less disruptive behavior. Students responding to the Student Questionnaire gave positive responses to all seven dimensions (i.e., recognition of differences, understanding of lessons, enjoyment of lessons, ease of lessons, learning of lessons, better grades, and better lessons).

- Participant Concerns. Educators were concerned about the time required for planning/preparation and the tendency of weaker-ability students to depend upon stronger-ability students. Recommended changes fell into the categories of implementation/preparation (e.g., more opportunity to pre-plan units, use earlier in the year) and expansion (e.g., increase numbers involved).

Factors influencing relative success include: 1) planning, communication, decision-making, and training were carried out thoughtfully with good cross-hierarchical participation, and 2) educators' enthusiasm (which probably influenced classroom use and positive student reaction). The project has begun well with enough schools involved to provide a supportive network for teachers. Educators may need to review progress and distribute resources (including teachers' energy) to address the immediate classroom concerns of current implementers (e.g., for materials development) and also the interests of others wishing to be trained.

Montgomery County. Montgomery has been implementing STL for two years using a lighthouse school strategy. In September 1982, educators "hoped" to improve student achievement in the basic skills, inform local educators about the model, and improve students' involvement in learning. They had "partly achieved" improving teachers' classroom competence and had "achieved" curriculum alignment and training educators to use the model. In June 1983, three objectives were "achieved" (curriculum alignment, helping teachers become better organized, and improving students' involvement in learning). One objective was no longer applicable (informing local educators about the model) and the remaining five objectives were "partly achieved." (See Table 30.)

- Scope and intensity. After the first year of implementation (June 1982), STL was being implemented in one junior high by approximately nine teachers and 250 students in a variety of subjects. In June 1983, 480 students were using STL. Student Team-Achievement Division (STAD) and Teams-Games-Tournaments (TGT) were the most popular STL strategies.

- Fidelity. The STL component not addressed by all of the teachers was the extensive use of peer tutoring. Teachers indicated that competition and team recognition were the aspects of STL having the greatest impact on students.

- Time. Educators spent an average of three months involved in STL across the 1982-83 school year. Teachers reported spending an average of 28% of their school week on STL-related activities. STL required teachers to spend more time preparing students (e.g., grouping, pretesting) and allowed less time for curriculum coverage. School administrators spent an average of four days on STL. STL took "substantially less" time and energy than similar previous projects.

- Roles and responsibilities. School administrators and central office staff spent the least amount of time and energy on materials development (.50)* and the most effort on administration (2.50). Central office staff spent the least time on evaluation (0) and the most effort on dissemination (3.00). The school administrator spent most of his/her effort on administration (3.00) and the least effort on materials development (0).

  Most of the training was done by MSDE, although some teachers also received training/information from the developer and from school administrators and teachers. Ratings of interactive support from the role groups involved in SITIP were average or above except for the ratings of central office staff support given by school administrators and teachers. Teachers and school administrators received the highest ratings and central office staff the lowest. By the beginning of June 1983, information about STL had been received by 50% of the teachers and training had been given to 25% of the teachers at the pilot school.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. STL has had an impact on training and on the school, educators, and students involved. In the area of training, the majority of teachers felt that they understood a great deal about the model.

  At the school level, educators and students benefitted from a new teaching technique and teacher interest and enthusiasm. Central office staff felt that involvement in SITIP enabled them to learn about a new teaching technique.

  Educators indicated that STL has had an impact at the classroom level (e.g., STL is a worthwhile, workable instructional model) in terms of the use of peer tutoring, competition, more complete instruction, and recognition of success.

  Teachers increased their knowledge about teaching and learning and improved their skills in a new teaching technique, in classroom management/organization/planning, and in assessing student progress/needs. They also strengthened their attitudes/perceptions about teaching.

  Increased student achievement was perceived by educators and evidenced in grades. During the 1981-82 school year, STL was being used with students performing one year below grade level. In 1982-83, above average students were also included.

  Affective student impact was perceived in terms of improved attitudes about their learning capabilities and about learning and school in general. Educators were unsure whether behavior was better as a result of STL.

- Participant Concerns. Educators were concerned about the time required to implement STL. Recommended changes fell into the categories of implementation/preparation (e.g., reduce the burden on teachers) and expansion (e.g., increase number of teachers involved).

Factors influencing relative success include: 1) teachers' knowledge of STL and interest in using it, and 2) educators' perceptions that STL benefits students. However, there appears to be little impact of STL outside the immediate classroom which suggests that it is a technique used at a teacher's discretion (an average of 28% time over three months). Educators may wish to determine how to maintain at least that level of use, bearing in mind that some teachers feel "burdened."

Prince George's County.* Prince George's has been implementing STL for two years using a capacity building strategy. In September 1982, educators "hoped" to train educators to use the model and improve students' involvement in learning (motivation). They had "partly achieved" two objectives--improving student achievement in basic skills and informing local educators about the model. Prince George's County did not indicate the status of their objectives in June 1983.

After the first year of implementation (June 1982), STL was being implemented across the three areas of the county in approximately 16 schools of all types with 21 teachers and 1,500 students in reading/language arts and science.** In June 1983, approximately 30 teachers were using STL.

Teachers improved their skills in assessing student progress/needs, and students improved their attitudes about learning and school. Administrators considered STL to be a useful teaching technique, but had higher priorities for the allocation of resources for the 1983-84 school year. It appears to have become an "underground project," approved by the central office but not centrally managed or supported. The primary cause for the change in status was competition for scarce resources.

Queen Anne's County. Queen Anne's has been implementing STL for two years using a capacity building strategy. In September 1982, educators "hoped" to improve student achievement in the basic skills and in other subjects and had "partly achieved" three objectives (helping teachers become better organized, improving time-on-task, and improving students' involvement in learning).

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* The educators in Prince George's County did not respond to the 1983 General Survey so many of the questions addressed by the evaluation report cannot be answered. The information about STL implementation in Prince George's County is based upon other sources (e.g., Key Contact Questionnaire-September 1982).

** It was difficult to measure the scope and intensity of implementation of STL as a result of SITIP since the county had been using the program prior to the SITIP project.

The remaining four objectives specified in Table 30 were already "achieved." In June 1983, only two objectives were "achieved" (i.e., informing local educators about the model and improving students' involvement in learning). Two objectives were dropped--improving student achievement in basic skills and ensuring curriculum alignment. The remaining five objectives were "partly achieved."

- Scope and intensity. After the first year of implementation (June 1982), STL was being used in one high school with 23 teachers and 500 students in a wide range of subject areas. In June 1983, 900 students were involved. Teams-Games-Tournaments (TGT) and Student Team-Achievement Divisions (STAD) were the most popular STL strategies.

- Fidelity. The STL component most consistently addressed by teachers was including a mix of students on each team. The component least addressed was the publicizing of successes. The other components were addressed by 73% to 91% of the educators. The largest number of teachers reported that the shared responsibility for team success was the aspect of STL having the greatest impact on students.

- Time. Educators spent an average of three months involved in STL across the 1982-83 school year. Teachers reported spending an average of 19% of their school week on STL-related activities. STL required teachers to spend more time preparing students (e.g., grouping, pre-testing) and allowed less time for curriculum coverage.

- Roles and responsibilities. Most of the training was done by central office staff and by school administrators and teachers. Teachers rated the interactive support received by the five role groups involved in STL as average or above. Teachers and school administrators received the highest ratings and developers received the lowest. By the beginning of June 1983, information on STL had been received by all central office staff and by all school administrators and teachers at the pilot school. Training had been received by all central office staff and by all of the school administrators and 25% of the teachers at the pilot school. Twenty-five percent of the teachers at the pilot school had received help.

- Impact. STL has had an impact on training and on the school, educators, and students involved. In the area of training, the majority of teachers felt that they understood the model and 50% felt that their teaching ability had improved as a result of their involvement with STL. Several teachers felt that they needed to learn more about STL.

  The pilot school benefitted from STL in terms of increased cooperation among educators and students, recognition, knowledge of a new teaching technique, and increased time to develop the curriculum.

  STL has had an impact at the classroom level (e.g., STL is a worthwhile, workable instructional model) in terms of the use of peer tutoring, increased opportunities for students to advance, and instructional variety.

  Teachers improved their skills in a new teaching technique, in classroom management/organization/planning, in the use of peer teaching, and in assessing student progress/needs. They also strengthened their attitudes/perceptions of how well students can work together and about teaching.

  Increased student achievement was perceived to some degree by educators and evidenced in test scores. Affective student impact was perceived in terms of enjoyment and an improved attitude toward learning and school.

- Participant Concerns. Educators were concerned about the amount of time required by STL and by the tendency of some students to "goof off" while in their groups. Recommended changes fell into the categories of implementation/preparation (e.g., more bulletin boards for publicizing team scores, and more workshops), involvement (e.g., have only voluntary participation), expansion (e.g., use by all instructors) and external assistance (e.g., MSDE should provide continued support and develop materials for use in business education).

Factors influencing relative success include: (1) educators' interest in trying STL, and (2) their belief that students enjoyed this instructional model. Changes in project objectives appear to be related to perceived impact and the implementation strategy being used. Capacity building (staff development) had the advantage of giving trainees the responsibility (ownership) for implementation, but gave energy to dissemination and a general level of STL use rather than focusing on "fine-tuning" application. Educators may want to consider the relative desirability (and investment of energy) in having many teachers familiar with STL (and using it when they choose) versus having some teachers using STL with selected subjects or units to the degree that students do not "goof off," but rather learn more or better.

Washington County.* Washington has been implementing STL for two years using a capacity building strategy (and had previously used STL as a pilot site for the developer). In September 1982, educators considered three of the nine objectives specified in Table 30 as not relevant for their project (curriculum alignment, helping teachers become better organized, and improving time-on-task). The other six objectives had been "partly achieved." In June 1983, two objectives were added to the six specified in September (helping teachers become better organized, and improving time-on-task). These two objectives, along with two other objectives (informing local educators about the model, and training local educators to use the model) were "partly achieved." The remaining four objectives were "achieved."

After the first year of implementation (June 1982), STL was being used in two schools (one elementary and one middle school) by eight teachers with 300 students in a variety of subject areas. Four of the elementary teachers had become involved with STL in 1977 as part of the pilot testing of the model conducted by Johns Hopkins University. By June 1983, fourteen schools of all types and 20 teachers were using STL with 600 students.

Teachers used STL periodically throughout the school year. Dissemination had not been as successful as originally anticipated. By the beginning of

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* The educators in Washington County did not respond to the 1983 General Survey so many of the questions addressed by the evaluation report cannot be answered. The information about STL implementation is based upon other sources (e.g., Key Contact Questionnaires).

June 1983, *information* had been received by 25% of the educators and *training* had been given to 25% of the teachers. The coordinator of the Professional Development Center is currently responsible for follow-up assistance.

STL has had an impact on the schools, educators, and students involved. At the *school level*, it promotes fair competition, and is easy and inexpensive to use. Increased *student achievement* has been perceived by educators and evidenced in better retention of information and in improved grades. Educators expressed a concern over the time required for materials preparation.

Factors influencing relative success include: 1) initially ambitious objectives (to have many teachers trained and voluntarily using STL after workshops), 2) conflicting priorities for central office staff (too many tasks to be done) combined with delays in delegating or sharing tasks with others, and 3) a capacity building strategy which gave teacher implementers autonomy of use (with many high quality applications), but which had no organizational support mechanisms. For the 1983-84 year, as the county adds Active Teaching and Mastery Learning to their SITIP activities, educators may want to consider processes to support implementation by teachers, and determine organization and communication structures and strategies to facilitate achievement of objectives matching local priorities.

Worcester County. Worcester has been implementing STL for two years using a capacity building strategy. In September 1982, educators had already "achieved" improvement of students' involvement in learning. All of the other objectives specified in Table 30 (except improving time-on-task, which was not considered to be relevant) were "partly achieved." In June 1983, improving time-on-task was an "achieved" objective along with informing local educators about the model, training local educators to use the model, and improving students' involvement in learning. The remaining five objectives were "partly achieved."

- Scope and intensity. After the first year of implementation (June 1982), STL was being used in one elementary school by 15 teachers and 302 students in a variety of subject areas. In June 1983, four schools (elementary and junior high/middle), 16 teachers, and 400 students were using STL. Student Team-Achievement Divisions (STAD) was the most popular STL strategy.

- Fidelity. The STL components addressed by 100% of the teachers were: including a mix of students on each team and publicizing team successes. The component least consistently addressed was relating quiz/tournament scores to individual and team achievement. The largest number of teachers reported that the cooperation and interaction among the students was the aspect of STL having the greatest impact on students.

- Time. Educators spent an average of five months involved in STL across the 1982-83 school year. Teachers reported spending an average of 17% of their school week on STL-related activities. STL required teachers to spend more time preparing students (e.g., grouping, pre-testing) and allowed less time for curriculum coverage.

  School administrators spent an average of 38 days and central office staff* an average of 15 days on SITIP. Central office staff felt that SITIP took somewhat more time and energy and school administrators reported that SITIP took "substantially more" effort than similar previous projects.

- Roles and responsibilities. School administrators and central office staff combined spent the least amount of time and energy on materials development (1.50)** and the most amount of time on administration (4.25). School administrators also spent "quite a lot" of time on inservice.

  Most of the training was done by school administrators and teachers, although some teachers received training/information from the developer, MSDE, and central office staff. During the summer (1982), STL workshops were conducted and attended by teachers from 11 schools. Educators rated the interactive support received from the five role groups involved in STL as average or above. Teachers received the highest ratings and central office staff the lowest ratings of support. By the beginning of June 1983, all teachers, 75% of the school administrators, and 50% of the central office staff had received information about STL. Training had been received by all teachers in the pilot school and by 25% of central office staff, school administrators, and other faculty. Help was received by 75% of the teachers and 25% of the other faculty in the pilot school.

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* Central office staff were also involved in another model.

** Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. STL has had an impact on training, on the school system, and on the schools, educators, and students involved. In the area of training, teachers reported that they understood the model. Some teachers felt that their teaching ability had improved as a result of their involvement with STL.

  The school system has benefitted from STL in terms of shared experiences with other schools and knowledge of a new teaching technique. The pilot school has gained recognition as an innovative school and teachers have been very enthusiastic about STL. School administrators felt that involvement in STL enabled them to learn a new teaching technique.

  Educators indicated that STL has had an impact at the classroom level (e.g., STL is a worthwhile, workable instructional model). They felt that it provided instructional variety for students. Teachers improved their skills in a new teaching technique, in classroom management/organization/planning, and in the use of peer teaching. They strengthened their attitudes/perceptions of how well students can work together and about teaching.

  Educators were unsure whether STL increased student achievement. Educators did report that STL resulted in improved retention of information (especially in basic facts such as the multiplication tables). Students enjoyed STL and improved their attitudes about learning and school. On the Student Questionnaire, students in grades one and two gave positive responses on all seven dimensions.

- Participant Concerns. Educators were concerned about the time required for planning and preparation, the difficulty in measuring achievement, and the possibility that STL could hold back academically talented students.

  Recommended changes fell into the categories of implementation/preparation (e.g., allow more time for classroom observations) and involvement (e.g., have only voluntary participation).

Factors influencing relative success include: 1) strong support by the pilot school principal; 2) the energy, enthusiasm, and professionalism of core teachers at the pilot school; 3) perceived success by local educators (of students' enjoyment of STL); and 4) purposeful use of appropriate STL approaches by teachers for given subject areas and grade levels. Educators may wish to consider the extent of use by any given teacher and find ways (if appropriate) to expand (e.g., to include another unit), bearing in mind that time is needed for materials development.

Teaching Variables (TV)

As stated in Chapter II, Teaching Variables (TV) addresses two variables found to be strongly related to instructional effectiveness and student achievement: "content" and "time". Implementation of "content" involves curriculum alignment and systematic record keeping of students' progress; implementation of "time" involves systematic classroom observation and strategizing to improve time-on-task.

During 1981-82, five LEAs (Calvert, Frederick, Kent, Montgomery, and Somerset) implemented TV. In 1982-83, one additional county (Talbot) became involved in TV. This section describes the implementation of TV including: planning; scope and intensity of implementation; time spent on implementing TV; roles and responsibilities of TV implementers; TV impact on school systems, individual schools, educators, and students; and participant concerns.

Planning

The extent of involvement of TV implementers in MSDE-organized planning activities during the 1981-82 school year is summarized below:

> Of those implementers responding to the General Survey, school administrators were more heavily involved in...planning than were

> central office staff and teachers. Central office staff were more heavily involved in...planning than were teachers. (Roberts, et al., 1982)

For the 1982-83 school year, MSDE did not organize any group planning activities but provided individual assistance in preparing the PEPPS proposal for the "new" LEA.

An analysis of local plans for the 1982-83 school year identified LEA objectives and the status of each at the beginning of September 1982.* Table 42 presents the objectives. In each case, the percent of LEAs that "hoped for", "partly achieved", or "achieved" each objective is indicated. As can be seen in Table 42, there were nine objectives identified. All nine were addressed to some extent by the LEAs. Eight objectives were already achieved by some of the LEAs as of September 1982. The greatest area of accomplishment related to curriculum alignment, and the least to improvement in student achievement.

Scope and Intensity of Implementation

In September 1982, six counties were involved in TV. Talbot was just beginning its involvement. As can be seen in Table 43, in June 1982, scope and intensity of implementation varied among the five "veteran" LEAs from two teachers in one elementary school in one county to 11 teachers in one elementary and one junior high/middle school in another county. Across the five LEAs approximately six schools and over 51 teachers in a variety of subject areas were involved in TV.

Table 44 presents the scope and intensity of TV implementation in June 1983. Across the six LEAs, three implementation strategies were being used

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* New LEAs were not required to submit information on status of objectives in September 1982.

Table 42

Status of Local Objectives, 1982-83: Teaching Variables

Local Objectives	Pre-Sept. 1982				Post-June 1983			
		Percent of Sites				Percent of Sites		
	N	1*	2*	3*	N	1*	2*	3*
1. Improve student achievement (basic skills).	5	20	40	40	7	43	43	14
2. Improve student achievement (other subjects).	5	20	60	20	6	50	33	17
3. Inform local educators about model.	4	50	25	25	7	29	14	57
4. Train educators to use model.	4	50	25	25	6	17	33	50
5. Improve teacher's classroom competence.	5	20	60	20	7	14	29	57
6. Ensure match of instruction, curriculum and test(s).	5	60	40	0	6	0	33	67
7. Help teachers become better organized.	5	20	60	20	7	14	43	43
8. Improve time-on-task.	5	20	60	20	7	29	29	43
9. Improve students' involvement in learning (motivation).	4	25	50	25	5	60	20	20

* 1 = Hoped for
2 = Partly achieved
3 = Achieved

Note. Total number of LEAs equals 6. Total number of sites equals 7. (The two sites in Montgomery County submitted individual sets of objectives). N equals the number of sites addressing each objective.

Table 43

Scope and Intensity, June 1982: Teaching Variables

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Calvert	LS	1	J/M	18	-	R/LA, M, Sc, SS, O
Frederick	PD	1	O	12+	-	R/LA, M, Sc, SS, O
Kent	LS	1	E	8	-	R/LA
Montgomery*	LS	2	E, J/M	11	-	R/LA, M
Somerset	LS	1	E	2	-	R/LA
Talbot	New District					

* Teachers at one school were using TV as a data collection technique for AT.

Subject Areas: R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social Studies
O=Other

Type: E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

Strategy: LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Table 44

Scope and Intensity, June 1983: Teaching Variables

LEA	Strategy	# of Schools	Type	# of Teachers	# of Students	Subject Areas
Calvert	LS	3	J/M	23	540	R/LA, M, Sc, SS, O
Frederick	PD	2	O	15	600	R/LA, M, Sc, SS
Kent	DW	4	E	32	676	R/LA
Montgomery*	LS	2	E, J/M	16	470	R/LA, M
Somerset	LS	1	E	8	217	R/LA, M
Talbot	LS	1	O	4	80	O

* Teachers at one school were using TV as a data collection technique for AT.

Subject Areas:
R/LA=Reading, language arts
M=Mathematics
Sc=Science
SS=Social studies
O=Other

Strategy:
LS=Lighthouse school
PD=Pilot district
DW=District wide
CB=Capacity building

Type:
E=Elementary school
J/M=Junior high/middle
H=High school
O=Other

(lighthouse school -- 4; pilot district -- 1; district-wide -- 1). Approximately 98 teachers in 12 schools were implementing TV in a variety of subject areas. Reading/language arts was the most common subject area. The percentage of schools in each county implementing TV in June 1983 ranged from 1% in Montgomery County to 50% in Kent County. Across the entire state, 1% of the schools were involved in TV at the end of the 1982-83 school year.

Some changes occurred between June 1982 and June 1983, the most obvious being the one new LEA: Talbot decided to use a lighthouse school strategy in one vocational-technical school with four teachers and 80 students in auto mechanics, masonry, carpentry, and agriculture. In general, the scope and intensity of implementation increased between June 1982 and June 1983 across the five "veteran" LEAs. None of the five districts changed its implementation strategy. Two LEAs increased in number of schools. All five LEAs increased the number of teachers implementing the model.

As mentioned earlier, TV includes a "time" and "content" variable. Sixty-two percent of the survey respondents reported implementing the "time" variable while 30% implemented the "content" variable. Only 22% of the teachers implemented both variables.

Thirty-four percent of the respondents implementing the "time" variable had observed other teachers and 36% had been observed by teachers, 72% by school administrators, and 49% by central office staff. Forty-five percent of the respondents strategized during staff meetings. Forty-seven percent of the respondents did not need to make any changes in their teaching strategies since the student engaged time was already high. However, 51% did make changes to improve time-on-task and 36% reported that these changes were successful.

Twenty-eight percent of the teachers implementing the "content" variable reported matching curriculum, instruction, and the CAT; 23% were aware of their student's prior learning (i.e., what students had been taught and their test scores for the previous school year); and 15% kept records of the content covered by objective for each report period. Twenty-three percent of the teachers had to modify the existing curriculum and/or their instruction.

Time Spent on the Model

This section discusses time spent on TV during the 1982-83 school year. Time across the school year is discussed first, followed by a discussion of the time spent by teachers in the classroom and by school administrators and central office staff.*

Across the School Year. During 1981-82, the majority of the teachers began TV implementation in September and finished in May or June. One county did not begin "time" observations until February and another LEA did not begin until April.

During 1982-83, implementers across the six counties were involved in TV for an average of eight months. No county was involved for less than five months. Calvert had the highest and Frederick the lowest average number of months involvement.

In the Classroom. During the 1981-82 school year, most counties were implementing the "time" variable and each teacher was observed approximately three times. When appropriate, teachers applied improvement strategies following analysis of observation data. In Calvert, also teachers applied a modified version of the "content" variable for most of the school year. Calvert and Montgomery were the only LEAs that reported implementing both the "time" and "content" variables.

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* This information is based primarily on the responses made by a sample of implementers who completed the General Survey. There were no central office respondents from Somerset County or school administrators responding from Frederick County.

In 1982-83, the teachers responding to the General Survey (N=33)* indicated that they spent an average of 29% of their school week on TV-related activities. Elementary teachers spent an average of 33% and secondary teachers an average of 19% of their school week implementing TV. These time allocations refer to the subject area for which "time" observations were conducted and/or "content" procedures were applied.

For the "time" variable, the number of observations made per teacher across the school year ranged from three to six. Most of these observations were done by school administrators. Forty-five percent of the teachers reported discussing observation results and strategies to improve time-on-task during staff meetings.

Time Spent by Administrators.** Twelve school administrators and central office staff across the LEAs spent an average of 15 days on SITIP. In general, school administrators spent slightly more time on SITIP (16 days) than central office staff (13.5 days).

Fourteen school administrators and central office staff reported spending about the same amount of time and energy on SITIP as they had on similar previous projects. However, central office staff in Calvert and Montgomery Counties and school administrators in Montgomery and Somerset Counties reported that "slightly more" to "substantially more" time and energy had been spent on SITIP, while school administrators from Calvert, and school administrators and central office staff from Talbot reported "slightly less".

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* No data were available from teachers in Talbot County.

** Administrators in Calvert and Montgomery Counties were also involved with other models.

Roles and Responsibilities

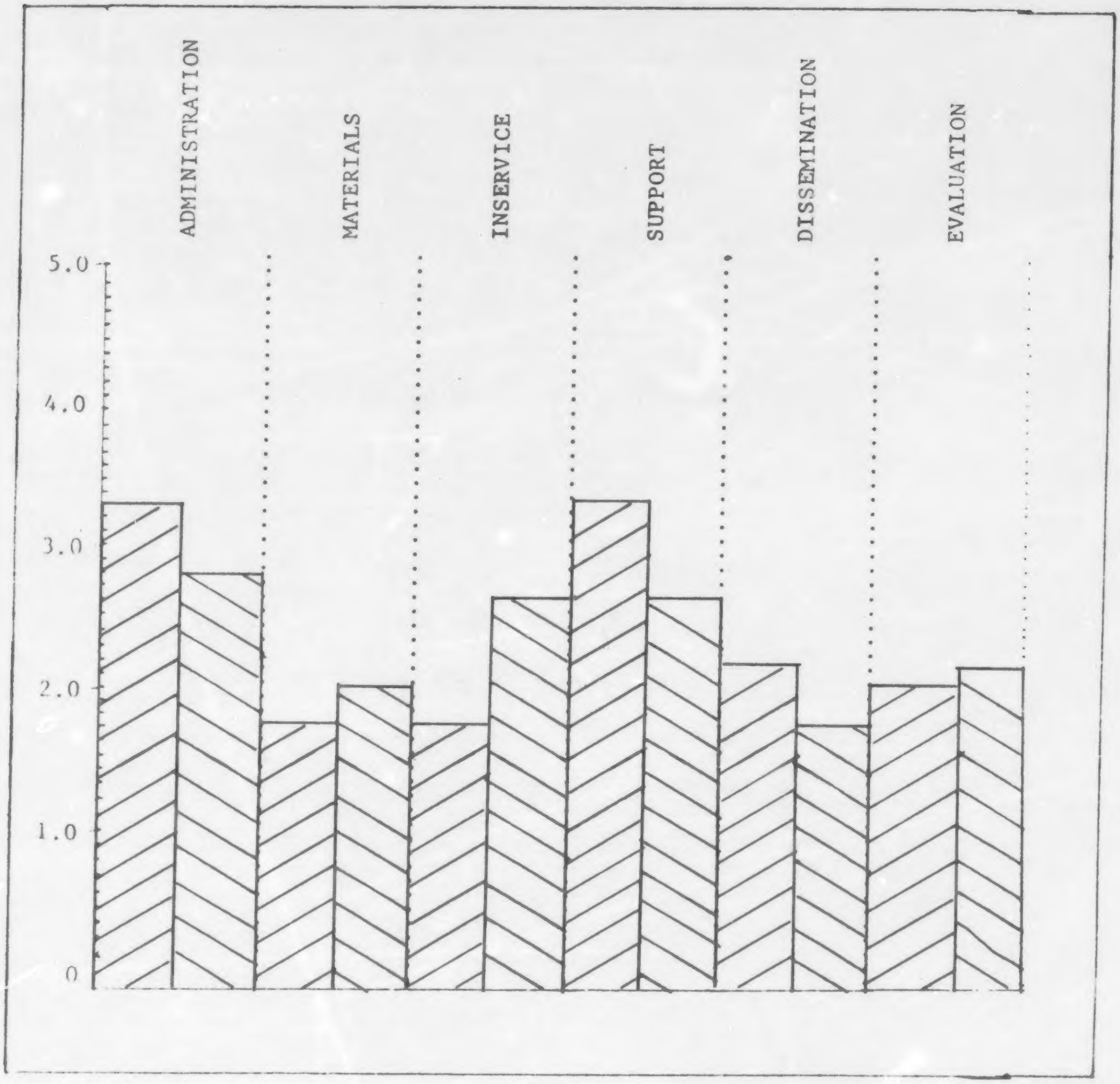
The SITIP design encourages involvement of a cross-hierarchical team, including: 1) central office staff, e.g., supervisors in instruction or coordinators of staff development; 2) school administrators, e.g., principals, vice principals, or department heads; and 3) classroom teachers. This section describes the people involved, what they did, and their relationship to each other from three perspectives: usual assigned roles, activities undertaken, and interactive support.

Usual Roles. Teachers, school-based administrators, and central office staff were all involved in TV. Of the seven central office staff responding on the survey, two were in staff development and five were in instruction. All six school administrators responding on the survey were principals (3 elementary, 1 junior high/middle, and two no grade level indicated). In general, TV implementation was carried out about equally by elementary and secondary teachers.

Activities and levels of effort. On the General Survey, six activity areas were identified and central office staff and school administrators from those LEAs responding to the survey were asked to indicate level of effort (time and energy) spent on each (with responses ranging from 0 "none" to 5 "a great deal). The areas of activity were: 1) administration (including planning and budget); 2) development of materials; 3) designing and/or conducting inservices; 4) supporting school implementation (e.g., problem-solving, supplying materials, etc.); 5) dissemination; and 6) evaluation. (Mean ratings are presented in Table 45.)

Table 45

Level of Effort: Teaching Variables, 1982-83



Values range from 0 "none" to 5.00 "a great deal" of time and energy.

-- -- -- Central Office Staff
— — — School Administrators

The level of effort spent by central office staff and school administrators on each activity during the first year of implementation is summarized below:

> Levels of effort were most similar for central office staff and school administrators in the areas of dissemination and materials development, followed by training, support, and evaluation, with most difference on administration. The greatest combined effort was spent on support and the least on materials development (Roberts, et al., 1982).

As can be seen in Table 45, during the 1982-83 school year, school administrators and central office staff combined spent the least amount of time on the development of materials (1.86) and the most time on administration (3.00). Most central office effort was spent on administration and supporting school implementation (3.29 for each activity). School administrators spent most of their time on administration (2.71).

Individual county responses indicated that there was some level of effort spent on each activity across all the LEAs with the exception of materials development in two counties. Administration received the highest level of effort in all the counties except Talbot; materials development in one county (Calvert); designing and/or conducting inservice in two counties (Calvert and Talbot); supporting school implementation in three counties (Montgomery, Somerset, Talbot); disseminiation in one county (Somerset); and evaluation in one county (Frederick).

Interactive Support. Teachers implementing TV could receive training/information from four sources: developers, MSDE, central office staff, and school-based staff (school administrators and teachers). The majority of the teachers responding to the survey (56%) received information and training from school administrators and teachers.

In Calvert (67% of the teachers) and Frederick (73%) most teachers received information/training from school-based staff; in Montgomery County (67%) from the developer and/or school-based staff; in Kent County (65%) from central office staff; in Somerset County from MSDE (60%); and in Talbot County (67%) from the developer and/or MSDE.

Survey respondents were asked to rate the support received from teachers, principals, central office, MSDE, and developers (from 1.00: very good, to 5.00: excellent). Ratings of interactive support from the 1982 survey are summarized below:

> ...for TV, central office staff were generally more positive in their assessment, rating all groups between 4.00 and 4.50. School administrators rated teachers highest (4.60) and considered central office support average to good (3.40). Teachers rated their colleagues as average to good (3.56), and awarded the lowest rating to central office staff (2.81 -- just below average). Teachers received a mean rating of 3.96, with teachers themselves awarding the lowest rating (3.56). School administrators received a mean rating of 3.85, with central office staff awarding the highest rating (4.50). Central office staff received a mean rating of 3.19; MSDE received a mean of 3.56, and topic developers were awarded a mean rating of 3.37. (Roberts et al., 1982)

As shown in Table 46, respondents of the 1983 survey rated the interactive support received from all five role groups as, in general, average (3.00) and above (except for central office staff and developers who received mean ratings below 3.00). Teachers received the highest and developers the lowest ratings of support. Teachers tended to be the least positive in their assessments.

The mean ratings given by the survey respondents in each of the individual counties were generally average (3.00) and above except for ratings of central office support in Frederick (2.33), Montgomery (1.87), and Talbot (2.80) Counties; MSDE support in Frederick (2.75) and Montgomery (2.78)

Table 46

Perceptions of Support Received: Teaching Variables, 1982-83

Respondents	N	Support Groups				
		Teachers	School Administrators	Central Office Staff	MSDE	Developers
Central Office	7	3.86	4.14	3.83	4.00	3.17
School Administrators	6	4.33	4.17	2.83	4.17	3.33
Teachers	48	3.65	3.50	2.90	3.08	2.80
Total	61	3.74	3.64	2.98	3.29	2.90

Mean ratings range from a low of 1.00 (very poor) to a high of 5.00 (excellent).

Counties; and developer support in Frederick (2.50), Kent (2.90), and Montgomery (2.25) Counties.

Impact

This section discusses TV impact in the area of training and on school systems, individual schools, central office staff, school administrators, teachers, and students.

Training. MSDE TAs held one follow-up training session for those counties implementing TV. The session was a combined follow-up held in the fall of 1982 at MSDE with participants implementing AT and STL. Eleven TV participants were present. During this joint follow-up, the 1982-83 evaluation design was reviewed by RBS, and participants met in small model-specific groups to review plans and to share needs and concerns.

TV participant evaluations of the follow-up (e.g., clarity, relevancy, and accomplishment of objectives, support from MSDE) were positive, the mean responses ranging from 3.91 to 4.83 on a scale from 1.00 (least positive) to 5.00 (most positive). The majority of the TV participants considered the small group discussions and evaluation overview as the best parts of the session. The needs expressed were varied, including requests for help in dissemination and for more information on time-on-task.

Teachers received information and training from a variety of sources, but for the most part, from school administrators and teachers. The majority of the teachers indicated that they understood the model (64%). Twenty-eight percent of the teachers indicated that they needed to learn more about the model. A larger percentage of teachers indicated that their teaching ability had not changed as a result of TV (36%) in comparison to teachers that indicated a change in teaching ability (28%).

Observers (all three role groups, but more often principals and supervisors) were trained by MSDE staff and/or developers. They applied TV, usually conducting "time" observations for participating teachers twice a year. They understood the procedures and carried them out appropriately. Use of data -- as feedback to teachers -- was also carried out as designed by the developer. Actual stratgizing for improvement in most cases appeared to be influenced primarily by the observers' experience (rather than by team expertise or a research base). This reflects partly on the perceived inadequacy of the research base for grades 6 and above.

School system. The impact of an innovation on a school system involves changes in practice or policy that affect or could affect more than a single school or single group of educators. Systemic impact of TV occurred in two LEAs where principals and supervisors were trained to use TV as a classroom observation technique, and were using it on either a formal or informal basis. In a third LEA, training was provided for staff in schools other than the pilot site, with options for voluntary use. To date there is no widespread systematic use.

Central office staff. TV enabled central office staff to learn about a new observational technique (5 LEAs). Central office staff in one LEA reported that the high engagement rates of students across the district confirmed that teachers were already aware of time-on-task. These results suggest that central office staff gained knowledge which some of them incorporated into their classroom observation practices.

Schools. The impact of an innovation on a single school involved only those educators within that school. TV impact on single schools included:

- increased time-on-task -- more effective management of classroom time (3 LEAs)

- new teaching techniques (4 LEAs)
- curriculum alignment (1 LEA)
- new perspective on possible reasons for student learning problems (1 LEA)
- ability to improve specific areas of instruction (1 LEA)
- use of pre and post tests to measure growth (1 LEA)
- awareness of importance of good teaching (1 LEA)
- sharing/cooperation among staff (3 LEAs)
- notoriety (1 LEA).

School Administrators. School administrators felt that their involvement in TV enabled them to learn a new teaching strategy/observational technique (3 LEAs), made them more aware of time-on-task (2 LEAs), enabled them to work with other staff (1 LEA), and gave them the self satisfaction of being involved with an effective program (1 LEA). These results suggest that school administrators perceive the TV "time" procedures primarily as a useful observational technique.

Classrooms and Teachers. Impact on teachers fell into 11 categories under the three general areas of: 1) increased knowledge/awareness, 2) improved skills, and 3) strengthened attitudes/perceptions (see Table 47). In addition, survey respondents assessed relative instructional value and impact on teachers in six areas on a five-point Likert scale (see Table 48).

Improved skills in a new teaching/observation technique was the teacher impact category reported by all role groups across the largest number of LEAs. As can be seen in Table 48, survey respondents indicated that TV is a worthwhile, workable model -- mean responses ranged from 3.73 to 4.00 (on a scale from 1.00, least positive, to 5.00, most positive). They also indicated that

Table 47

Impact on Teachers as Reported by Each Role Group: Teaching Variables, 1982-83

Impact on Teachers	Role Groups (Reported in No. of LEAs; N=6)		
	CO	SA	T
As a result of TV teachers have:			
Increased knowledge/awareness			
-of learning theory.	0	1	0
-of time-on-task.	0	1	2
-of classroom procedures which are/are not effective.	0	0	2
-of curriculum alignment.	0	0	1
-of the research.	0	0	1
Improved skills			
-in a new teaching/observation technique.	3	2	5
-in classroom management/organization/planning.	0	0	3
-in assessing student behavior/attitudes/needs.	0	1	3
-in controlling time-on-task.	0	0	2
Strengthened attitudes/perceptions			
-about teaching (e.g., involvement, cooperation, sharing, morale, self esteem, professional growth, recognition, etc.).	1	2	3
-about the importance of keeping students on task.	1	2	1

CO=Central Office; SA=School Administrators; T=Teachers

Table 48

Instructional Impact as Perceived by Survey Respondents: Teaching Variables, 1982-83

Impact on Instruction	Role Groups			
	CO N=7	SA N=7	T N=49	Total N=63
Instructional Value				
Works in classroom.	4.00	4.29	3.96	4.00
Is worth the work it takes.	4.41	3.86	3.65	3.73
Is a worthwhile teaching approach.	3.86	4.14	3.73	3.79
Impact on Teachers				
Teachers enjoy it.	3.71	3.86	3.49	3.56
Teachers have increased knowledge.	4.00	4.14	3.47	3.60
Teachers have increased skills.	4.14	4.00	3.35	3.51
Impact on Students				
Students enjoy it.	3.57	3.29	3.55	3.52
Students are less disruptive.	3.14	3.00	3.12	3.11
Students' achievement has increased.	3.57	3.43	2.96	3.08
Students are learning more.	3.29	3.00	2.71	2.81
Students' general behavior is better.	3.57	3.57	2.94	3.08
Time				
Teachers spend more time preparing students.	2.57	3.14	2.65	2.69
Teachers cover curriculum in less time.	2.86	2.86	2.77	2.79

Mean ratings range from 1.00 (strongly disagree) to 5.00 (strongly agree).
CO=Central Office; SA=School Administrators; T=Teachers

teachers enjoyed TV and increased their knowledge and skills (mean responses ranged from 3.51 to 3.60), but these responses were not as high as the responses given to classroom impact. Teachers were consistently lower than the other role groups in their ratings of teacher impact and instructional value.

Students. Impact of TV on students fell into ten categories under the three general areas of: (1) improved attitudes or awareness, (2) increased achievement, and (3) benefits from better instruction (see Table 49). Also, LEAs were asked to submit data summaries of cagnitive and affective measures assessing TV impact in terms of student achievement and attitudes. The results of these measures are also summarized in this section. Increased achievement as evidenced in test scores was the most commonly reported category of student impact across all three role groups. Improved awareness about classroom behavior and time-on-task was the student impact category reported by teachers from the largest number of LEAs. As can be seen in Table 49, survey respondents were not sure if students' behavior was better/ less disruptive (3.08 and 3.11 respectively), whether student achievement had increased (3.08) or whether students were learning more (2.81) as a result of TV.

None of the LEAs submitted usuable affective data measuring the impact of TV on student attitudes.

Cognitive measures of student impact were submitted by Kent and Somerset Counties. Kent County reported CAT data for grades one through four from Spring 1981 through Fall 1982. Since implementation began in April 1982, these data are useful only to contribute to trend analysis as tests are given in 1983 and 1984. To date, no conclusions can be drawn.

Table 49

Impact on Students as Reported by Each Role Group: Teaching Variables, 1982-83

Impact on Students	Role Groups (Reported in No. of LEAs; N=6)		
	CO	SA	T
As a result of TV students have:			
Improved attitudes or awareness			
-about learning and school (e.g., increased interest, cooperation, involvement, enthusiasm, motivation).	0	0	2
-about classroom behavior/time-on-task.	0	0	4
-of teacher interest	0	0	1
-of value of being organized.	1	0	1
Improved achievement			
-in test scores.	2	2	3
Benefitted from better instruction which provides			
-a greater variety of activities.	1	0	0
-a more complete program.	0	0	1
-clear teacher expectations.	0	0	1
-more organization.	0	0	1
-more attention to academic content.	0	0	1

CO=Central Office; SA=School Administrators; T=Teachers

Somerset County submitted Spring 1983 CAT scores for reading and math for grades one through three. The impact that TV had on these scores cannot be measured since no comparative data (e.g., pre-test scores, trend analysis) were provided.

"Cause and effect" claims cannot be made for any of the sites in terms of direct impact of TV on students. The relative uncertainty of survey respondents, together with anecdotal data collected during the year, suggest that any impact TV may be having on teachers is not being felt by students.

Participant Concerns

Chart 8 lists the concerns reported by TV implementers. Concerns were divided into model and implementation concerns, with all LEAs reporting the former, and four LEAs reporting the latter. The most common model concerns were that TV is complex and difficult to implement, takes too much time and paperwork, that some of the coding categories may not be appropriate, and that teachers are often afraid of or feel pressured by peer observation. The most common implementation concern was time.

Chart 9 lists the recommendations/solutions which were divided into four general areas: implementation, involvement, expansion, and external assistance. The largest number of LEAs made recommendations in the area of implementation. In the three LEAs recommending expansion other educators within those LEAs expressed concerns about the model (e.g., negative teacher attitudes, time).

These results suggest that each LEA should examine the relative value of TV, how it is being used, and what improvements can or should be made.

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Chart 8

Concerns/Problems Reported: Teaching Variables, 1982-83*

Model concerns

- Lack of research base (1)
- Complexity, difficulty to implement (2)
- Do not agree with some of the coding categories/too judgmental (2)
- Teacher fear of peer observation/pressure of being observed (2)
- More useful for new teachers (1)
- Requires too much time and paperwork (3)

Implementation concerns

- Lack of central office support (1)
- Those involved did not know why TV was being done (1)
- General negative attitude/teacher apathy (1)
- Lack of time (2)
- Leaving class to substitutes (by teacher observers) (1)
- Observers were not monitered (1)

* Figures in parenthesis indicate the number of LEAs making a given statement.

Chart 9

Recommendations/Solutions: Teaching Variables, 1982-83*

Implementation/preparation

Provide more time to strategize (1)
Provide more specific ideas for improving instruction (1)
Provide more time for paperwork/require less paperwork (2)
Implement the content variable (2)
Do not begin implementation during first few days of school (1)
Do not expect implementation (in 2 years) of TV on top of new LEA priorities (1)
Assign new leadership (1)

Involvement

Drop program-waste of time/drop time-on-task analysis (3)
Teachers must see value of process (1)
Not for every teacher (1)

Expansion

Increase number of educators/subject areas/schools (3)

External assistance

MSDE should increase funding (1)
More central office support (1)
More central office and MSDE workshops (2)
More networking/sharing among counties and within county (2)

* Figures in parenthesis indicate the number of LEAs making a given statement.

Summary and Conclusions

In the preceding pages each research question or issue has been addressed and findings discussed across LEAs. Here some general conclusions across issues and LEAs are reviewed. Then activities are summarized for each LEA.*

It is apparent that TV is perceived primarily as a classroom observation strategy used in the supervision of teachers. Only in Calvert and Montgomery is that perception modified to have a professional development orientation. (It is interesting to note that both those sites used both "time" and "content" variables.) In all cases the "time" variable of TV was applied as a diagnostic/prescriptive assessment/assistance technique designed to improve teachers' classroom management skills. However, the emphasis varied among LEAs. In two LEAs the improvement activities were emphasized, (and there the principals acted in support of teachers); in three LEAs there was more emphasis on assessment (with principals acting as observers and subsequently making recommendations); and in one LEA there was a dual purpose, one attending to the immediate activities of teachers observed and the other addressing a more distant research-oriented objective (with the principal somewhat disassociated from both). The demands of TV were high, particularly for scheduling observations (and, in some cases, dealing with difficulties related to use of substitute teachers). Also, since TV was perceived by many teachers as an evaluation system, there was resistance to the model that was not always overcome.

Impact was made to a small extent on students' attitudes to learning and the importance of using time well. There was almost no evidence of impact on achievement.

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* Levels of information vary because some LEAs provided more documentation or other evidence of model implementation.

Impact was made on individual teachers' knowledge and on classroom management skills. However, although educators considered that they improved time on task, they did not necessarily consider that teaching ability improved (apparently perceiving those as two separate sets of behaviors). When strategizing for improvement occurred in staff meetings, teachers' isolation and resistance decreased. Impact was made on the school system when supervisors incorporated TV into their classroom observation activities, or when training was provided to others outside the original pilot school.

The strategies used to communicate across hierarchical levels and to make decisions (particularly as to the purpose of classroom observations) were crucial to the relative success of the project. Impact was more positive when teachers: (1) believed that their opinions counted, (2) valued the recommendations for improvement made by observers and/or their colleagues, and (3) believed that the purpose of TV was to share improvement strategies relevant to identified needs rather than to evaluate an aspect of their classroom behavior; when principals: (1) emphasized professional development, and (2) found that TV directly contributed to an existing school priority or need, and then planned and acted to fit the model and the priority together; when central office staff: (1) supported open communication and shared decision-making, (2) involved teachers in clarifying the purpose of the project and how best that should be achieved, (3) accessed appropriate training and information assistance, and (4) maintained leadership, linking across hierarchical levels to participate in information exchange and to support school-based implementation. Positive impact was reduced or barriers created when: (1) teachers felt that TV observation and feedback were evaluative and lacking credibility (either in the definitions of coding or in the relevance and value of the recommendations made); (2) teachers perceived the project as an assessment system; and (3) the purpose was not discussed and clarified among role groups. Since the "content" variable had a strong instructional emphasis, requiring teacher participation in lesson planning to assure student opportunity to learn stated objectives, when this variable was implemented there was less resistance from teachers, and a stronger focus on the "improvement" purpose.

Given the nature of TV as implemented in most sites, its primary value appears to have been in providing principals and supervisors with a systematic method of determining time-on-task.

In the following case reports of the six LEAs implementing TV, attention is given to the influential factors mentioned above and also to specific objectives and results achieved at each site.

Calvert County. Calvert has been implementing TV for two years using a lighthouse school strategy. In September 1982, those involved in the project "hoped" to inform educators about the topic and had "partly achieved" the remaining eight objectives specified in Table 42. In June 1983, three objectives were "hoped for" (i.e., improving achievement in the basic skills and in other subject areas, and improving students' involvement in learning). One objective (i.e., ensuring a match of instruction, curriculum, and tests) was "achieved". The remaining five objectives were "partly achieved".

- Scope and Intensity. After the first year of TV implementation (June 1982), TV was being implemented in one middle school in a variety of subject areas. In June 1983, the two other middle schools were beginning their involvement. Educators were implementing both the time and content variables. Two teachers observed all the teachers at the pilot middle school periodically during the school year. Administrators did not observe, which helped to alleviate teacher anxiety and resistance. Strategy sessions were held to help the teachers find ways to improve time-on-task. Instruction was matched to state and county objectives and to the CAT. Checklists of objectives were developed for teachers to record when instruction was provided.

- Time. Educators spent an average of ten months involved in SITIP across the 1982-83 school year.* Teachers reported spending an average of 39% of their school weed on TV-related activities (e.g., observation and application of strategies to increase time-on-task during the course of instruction in the subject areas selected).

  The school administrator reported spending 30 days on SITIP, spending "slightly less" time and energy in comparison to similar previous projects. The central office respondent reported spending "slightly more" effort on SITIP. Educators, in general indicated that TV did not require teachers to spend more time preparing students (e.g., grouping, pre-testing).

- Roles and Responsibilities. School administrators and central office staff combined spent the same amount of time and effort (4.00)** on all six activities (i.e., administration, materials development, inservice, supporting school implementation, dissemination, and evaluation). Central office spent "a great deal" of effort (5.00) on all activities except evaluation which received "quite a lot" of time and effort (4.00). The school administrator spent some effort (3.00) on all six activities.

  Most of the training of teachers was done by school-based staff. Educators rated the interactive support received by the five role groups involved in TV as average (3.00) and above with the exception of the school administrator's rating of central office support which received a rating of 2.00. School administrators received the highest ratings and central office the lowest ratings of support. By June 1983, information and training had been received by about 25% of the educators in the district. Help had been received by about 75% of the central office staff and teachers and 50% of the school administrators.

- Impact. TV has had an impact on training and on the schools, educators, and students involved. In the area of training, 50% of the teachers felt that they understood the model. However, 50% also indicated they would like to learn more about the model. Fifty percent reported that their teaching ability had improved as a result of their involvement with TV.

  At the school level, involvement in TV has enabled educators to learn a new teaching technique and has promoted sharing and cooperation among the staff.

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* The central office staff and school administrator were involved with more than one model.

** Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Central office staff reported that TV enabled them to acquire better organizational skills and to learn a new teaching technique. School administrators also became aware of a new teaching strategy and were able to work more closely with their staff as a result of TV.

Educators indicated that TV has had an impact at the classroom level (e.g., TV is a worthwhile, workable instructional model). TV had resulted in a greater variety of instructional activities. Teachers enjoyed TV and increased their knowledge and skills, especially knowledge of the relevant research and skills in a new teaching/observation technique, in classroom management/organization/planning, and in assessing student behavior/attitudes/needs. Teachers also strengthened their attitudes about teaching as a result of TV involvement.

Increased student achievement was perceived to some degree by educators although no formal assessment data were provided.

Affective student impact was perceived by educators who felt that their students enjoyed TV and were less disruptive. Students also improved their attitudes about learning and school and their awareness of classroom behavior, time-on-task, and teacher interest.

- Concerns and Changes. Some educators did not agree with some of the coding categories and were concerned about teachers' fear of peer observation and lack of central office support. They recommended more time for paperwork, more workshops, increased networking, and expansion during the 1983-84 school year.

Factors influencing the relative success of the project included: 1) the expertise developed by the teacher-observers, 2) a supportive pilot site principal, 3) a sense of teacher ownership, and 4) (a negative influence) changing central office leadership. Continuation and expansion indicate a strong commitment to the project and belief among the teachers that TV is useful. The lack of student achievement data appears not to concern educators, who appear to be focusing more on staff development (in its broadest sense). Therefore, educators may wish to assess impact on teachers more closely in the 1983-84 school year.

Frederick County. Frederick County has been implementing TV for two years using a pilot district strategy. The status of project objectives was not specified for September 1982. In June 1983, educators "hoped" to inform local educators about the model and train them to use it. They had "partly achieved" improving teachers' classroom competence, helping teachers become better organized, and improving time-on-task. One objective, ensuring a match between instruction, curriculum, and tests was "achieved." The remaining two objectives specified in Table 42 were not given a status.

- Scope and Intensity. After the first year of TV implementation (June 1982), TV was being used in one middle school/high school by 12+ teachers in a variety of subject areas. In June 1983, 15 teachers, and 600 students were involved in the project. Educators were mostly implementing the time variable, although two of the survey respondents said that they were also implementing the content variable. Both teachers and administrators were observers, although the former were primarily responsible for TV. Data feedback and strategizing for improvement (if needed) were carried out on an individual basis.

- Time. Educators spent an average of 5 months involved in SITIP across the 1982-83 school year. Teachers reported spending an average of 11% of their school week on TV-related activities (e.g., observation and application of strategies to increase time-on-task during the course of instruction in the subject areas selected).

  The central office staff respondent reported spending ten days on TV, which was "about the same" amount of time and energy in comparison to similar previous projects. Educators, in general, indicated that TV did not require teachers to spend more time preparing students (e.g., grouping, pre-testing), and that TV did not allow teachers to cover the curriculum in a shorter period of time.

- Roles and Responsibilities. Central office staff spent no time and energy on materials development and the most effort on administration and evaluation (4.00 on each activity).*

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal)

Most of the training of teachers was done by school-based staff. Educators rated the interactive support received by the five role groups involved in TV as average (3.00) and above, with the following (below average) exceptions -- teachers' ratings of support from school administrators (2.91), from central office staff (2.27), from MSDE (2.82), and of developers (2.55); and central office ratings of support from MSDE (2.00) and from developers (2.00). Teachers received the highest overall ratings (3.67) and central office the lowest (2.33). By June 1983, 52 teachers in the pilot school had received information about TV, and seven teachers had received training and help. One "other" faculty member at the pilot school had also received training.

- Impact. TV has had an impact on training and on the school, educators, and students involved. In the area of training, 54.5% of the teachers felt that they understood the model. Thirty-six percent indicated that their teaching ability had improved as a result of TV while the same percentage said that it had not.

  At the school level, TV involvement has enabled educators to become more effective in classroom management, to share ideas with other educators, and to learn new instructional techniques.

  Central office staff reported that TV enabled them to learn a new strategy to improve teaching.

  Educators indicated that TV has had an impact at the classroom level in terms of better organization and more attention to academic content. Teachers increased their knowledge/awareness of time-on-task, and the research on effective teaching, and their ability to distinguish between classroom procedures which are or are not effective. They improved their skills in a new teaching/observation technique and in classroom management. Teachers also strengthened their attitude about teaching.

  Increased student achievement was not perceived to any significant extent by educators. However, students did improve their awareness of classroom behavior and time-on-task, enjoyed TV, and were less disruptive.

- Concerns and Changes. Educators were concerned about the lack of a research base for TV at the secondary level. Some educators did not agree with some of the coding categories. They also did not like having to leave their classes with substitutes while they observed. They were concerned that observers were not monitored (peer credibility), and they felt that they did not have enough time to implement TV.

> Educators recommended that more time be provided for strategizing and for paperwork, that new leadership be assigned to the project, and that teachers should not be expected to implement a new program such as TV on top of other new LEA priorities. Other suggestions made included dropping the program altogether and engaging in more sharing/networking with other counties.

Factors influencing the relative success of the project included: (1) conflicting priorities of central office staff; (2) use of two classroom observation methods (TV and another) with somewhat different purposes; (3) teacher's discomfort with some coding definitions, and with observation arrangements which reduced the perceived value of the model; (4) teachers' perceptions of support received (below average); and (5) very little evidence of impact on teachers and students. These factors reflect both on the model and on the strategies and procedures used to carry out implementation. Local educators may need to review the extent to which they believe that TV can help them achieve objectives they consider important, and subsequently modify their activities.

Kent County. Kent County has been implementing TV for two years using a lighthouse school strategy. In September 1982, one objective, ensuring a match of instruction, curriculum, and tests was "hoped for." In June 1983 with the addition of three schools, only two objectives remained "achieved" -- informing local educators about the model and training educators to use the model. One objective -- improving achievement in the basic skills -- was "partly achieved". Ensuring a match between instruction, curriculum, and tests was no longer considered an objective and the remaining five objectives were "hoped for."

- Scope and Intensity. After the first year of implementation (June 1982), TV was being used in one elementary school by eight teachers in reading/language arts. In June 1983, TV had expanded to three other elementary schools. Thirty-two teachers and 676 students were involved in TV. Educators were implementing the time variable. Observations were done by principals and supervisors who carried out data feedback and strategizing for improvement on a one-on-one basis. Sixty-five percent of the teachers reported not needing to make changes in their classroom management after time-on task analysis.

- Time. Educators spent an average of 8 months on SITIP across the 1982-83 school year. Teachers reported spending an average of 32% of their school week on TV-related activities (e.g., observation and application of strategies to increase time-on-task during the course of instruction in the subject areas selected).

  Central office staff spent an average of 12.5 days and school administrators an average of 7 days on SITIP. SITIP took "about the same" amount of time and energy for both central office and school administrators as had similar previous projects. Educators, in general, indicated that TV did not require teachers to spend more time preparing students (e.g., grouping, pretesting) and that TV did not allow teachers to cover the curriculum in a shorter period of time.

- Roles and Responsibilities. Central office staff and school administrators combined spent the least amount of time and effort on dissemination (1.20)* and the most effort on administration (1.80). Central office spent the most time on supporting school implementation and dissemination (2.50 for each activity) and the same amount of time (2.00) on each of the remaining five activities. School administrators spent very little time on dissemination (.33) and the most effort on administration (1.67).

  Most of the training of teachers was done by central office staff. Administrators and supervisors were trained by developers and MSDE. Educators rated the interactive support received by the five role groups involved in TV as average (3.00) and above, with the exception of teachers' ratings of support from developers (2.76). School administrators received the highest ratings of support, and developers the lowest ratings. By June 1983, information had been received by all central office staff by about 75% of the school administrators and by 25% of the teachers. Training had been received by 50% of the central office staff, by 75% of the school administrators, and by 25% of the teachers. Fifty percent of the central office staff and 25% of the school administrators and teachers had received help.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. TV has had an impact on training and on the schools, educators, and teachers involved. In the area of training, 65% of the teachers understood the model. Sixty-five percent indicated that their teaching ability had not changed as a result of TV, suggesting that engagement rates were already high for many of the teachers.

  At the school level, time-on-task increased, educators gained a new perspective on some possible reasons for student learning problems and worked together toward a common goal, and the schools gained recognition for their participation in the SITIP project.

  Central office staff and school administrators reported that TV enabled them to learn a new observational technique.

  Educators indicated that TV has had an impact at the classroom level in terms of clear teacher expectations. Teachers increased their knowledge/awareness of the types of classroom procedures which are or are not effective, and improved their skills in a new teaching/observation technique and in classroom management. They also strengthened their attitudes about teaching and about the importance of keeping students on task.

  Increased student achievement was evidenced to some extent in test scores. Affective student impact was felt in terms of improved attitudes or awareness about classroom behavior and time-on-task and of the value of being organized.

- Concerns and Changes. Educators expressed both model-specific concerns (i.e., disagreement with some of the coding categories, teacher apprehension about observations, the amount of time and paperwork involved) and implementation concerns (i.e., lack of knowledge about why the project was being done and a general negative attitude and apathy among some of those involved). Recommendations fell into three categories: implementation (i.e., implement the content variable, do not begin implementation during the first few days of school); involvement (i.e., teachers must see the value of the program, drop the program altogether); and expansion (i.e., increase the number of people involved).

Factors influencing relative success included: (1) some initial uncertainty about desirable scope and intensity and how responsibilities should be shared; (2) teachers' resistance, which has been reduced but still exists in "pockets," partly due to a lack of understanding of the project or of its value; (3) gradually growing commitment to TV, reinforced by some perceived success. If teachers became better informed about the model and understand the potential benefits of its use in the community, TV could become successfully integrated into classroom supervision practices. At present, it appears to be moving toward that point but still needs energy invested in interactive support and in demonstrating worthwhile impact.

Montgomery County. Montgomery County has been implementing TV for two years using a lighthouse school strategy. In September 1982, the elementary school involved in the project* had "achieved" one objective -- improving achievement in basic skills, had chosen not to address "informing and training other educators," and had "partly achieved" the remaining objectives specified in Table 42. In June 1983, all the "partly achieved" objectives were "achieved" with the exception of improving student achievement in non-basic skills subjects which remained "partly achieved". Informing educators about the model, which was not given a status in September, was "achieved" by June. Improving achievement in basic skills was "partly achieved" in June.

In September 1982, the middle school "hoped" to achieve two objectives (i.e., training educators to use the model and ensuring a match between instruction, curriculum, and tests). Improving students' involvement in learning was not considered to be an objective. The remaining six objectives specified in Table 42 were "partly achieved." In June 1983 all eight applicable objectives had been "achieved".

- Scope and Intensity. After the first year of implementation (June 1982), eleven teachers were using TV in 2 schools (one elementary, one middle) in reading/language arts and mathematics. In June 1983, TV had expanded to include 11 teachers and 470 students. In the elementary school, Active Teaching (AT) was also being used to improve time-on-task. The teachers responding to the survey indicated that they were implementing both the time and content variables. For the content variable 100% of the teachers matched the curriculum, instruction and tests, knew what students had been taught previously and their test scores, and modified the curriculum and/or instruction when necessary. For the time variable, fifty percent of the teachers said they had been observed by other teachers and 50% by principals. They all said that they strategized during staff meetings and 83% made changes to improve time-on-task with 67% indicating that time-on-task had improved as a result of these changes.

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* The two sites implementing TV in Montgomery County submitted two separate Key Contact Questionnaires specifying different objectives.

- Time. Educators spend an average of 10 months of SITIP across the 1982-83 school year.* Teachers reported spending an average of 24% of their school week on SITIP-related activities (e.g., observation and application of strategies to increase time-on-task during the course of instruction in the subject areas selected).

  Central office staff spent an average of 16 days on SITIP which was "slightly more" time and energy in comparison to similar previous projects. The school administrator spent "substantially more" time and effort on SITIP. Educators, in general indicated that TV required teachers to spend slightly more time preparing students (e.g., grouping, pre-testing) and did not feel that TV allowed teachers to cover the curriculm in a shorter period of time.

- Roles and Responsibilities. Central office staff and school administrators combined spent the least amount of time and effort on evaluation (1.33)** and the most effort on administration and supporting school implementation (3.67 for each activity). Central office staff spent no time on evaluation and "some" to "quite a lot" of time on administration and supporting school implementation (3.50 for each activity). The school administrator spent the least time on dissemination (2.00) and "quite a lot" of time (4.00) on each of the remaining five activities -- administration, materials development, inservice, supporting school implementation, and evaluation.

  Most of the training of teachers was done by the developers and school-based staff. Educators rated the interactive support received by the five role groups involved in TV as average (3.00) and above with the following exceptions: school administrators' and teachers' ratings of central office support (1.00 and 1.67 respectively); and teachers' ratings of support from MSDE and developers (1.83 for each role group).

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* Central office staff and the elementary administrator and teachers were involved with more than one model.

** Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

Central office had the lowest and teachers the highest ratings of support. By June 1983, *information* and *training* had been received by all school administrators and teachers at the pilot schools, and by about 10% of central office staff and "other" faculty. *Help* had been received by all school administrators, by 50% of the teachers and 10% of the "other" faculty at the pilot schools.

- *Impact*. TV has had an impact on training and on the schools, educators, and students involved. In the area of *training*, 83% of the teachers felt that they understood the model and 67% said that they would like to learn more. None of the teachers indicated that their general teaching ability had improved as a result of TV.

  At the *school level*, time-on-task has increased and educators have learned to use a new teaching/observation method.

  School administrators reported that involvement in SITIP has given them the self satisfaction of applying an effective technique.

  Educators indicated that TV has had an impact at the *classroom level*, in terms of providing a more complete instructional program. *Teachers* increased their knowledge/awareness of learning theory, and improved their skills in a new teaching/observation technique and in assessing student behavior/attitudes/needs.

  Increased *student achievement* was perceived by teachers in test scores. *Affective* student impact was felt somewhat in terms of student enjoyment. Also, since some students saw video tapes of themselves which they discussed using TV coding concepts, responsibility for learning appeared to increase.

- *Concerns and Changes*. Educators were concerned about the complexity of the model which makes it difficult to implement. Recommendations fell into two categories: implementation (i.e., provide more specific ideas for improving instruction); and external assistance (i.e., increase state funding, more central office support).

Factors influencing relative success included: 1) strong commitment by the principals who used TV to support other school priorities; 2) strategizing in staff meetings which allowed teachers to share their expertise; 3) reinforcement of TV with other related research-based information accessed by the principals. Within the two pilot schools TV has been used well as a mechanism for professional development, has influenced classroom management, and reduced teacher isolation.

Somerset County. Somerset County has been implementing TV for two years using a lighthouse school strategy. In September 1982, all nine objectives specified in Table 42 were "hoped for." In June 1983, four had been "partly achieved" (i.e., improving achievement in basic skills and in other subject areas; ensuring a match between instruction, curriculum, and tests; and improving students' involvement in learning), and the remaining five were "achieved".

- Scope and Intensity. After the first year of implementation (June 1982), two teachers were using the time variable in one elementary school in reading/language arts. In June 1983, eight teachers were using TV with 217 students in reading/language arts and mathematics. Most of the time-on-task observations were done by the principal and/or central office supervisor. Teachers strategizing during staff meetings. Eighty percent of the teachers reported making changes to improve time-on-task and 80% indicated that time-on-task did improve. Principals in other schools were trained in TV by the pilot school principal and MSDE staff, and some have observed classes using TV techniques.

- Time. Educators spent an average of nine months on SITIP across the 1982-83 school year. Teachers reported spending an average of 49% of their school week on TV-related activities (e.g., observation and application of strategies to increase time-on-task during the course of instruction in the subject areas selected).

  The school administrator did most of the time-on-task observations which consisted of three observations of each teacher at the beginning and end of the school year. He also helped train other principals and central office staff on how to use the observational technique. He reported that "substantially more" time and energy had been spent on TV in comparison to similar previous projects. Most of his time was spent on administration, supporting school implementation, and dissemination (5.00 for each activity).* The least effort (none at all) was spent on materials development.

  Most of the training of teachers was done by MSDE. Educators rated the interactive support received by the five role groups involved in TV as average (3.00) and above. Teachers and school administrators received the highest ratings and developers the lowest ratings of support. By June 1983, all school administrators (and teachers in the pilot school) had received information, training and help. Seventy-five percent of the central office staff had received information and training and 100% had received help.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. TV has had an impact on training and on the schools, educators, and students involved. In the area of training, 75% of the teachers reported that they understood the model and 50% said that their teaching ability had improved as a result of their involvement in SITIP.

  At the school level, TV has enabled educators to improve specific categories of instruction. Educators also felt that they benefitted from the use of pre and post tests to measure growth.

  Central office staff and school administrators have learned a new observational technique.

  Educators indicated that TV is a worthwhile, workable instructional model. Teachers increased their knowledge/awareness of time-on-task, and improved their skills in controlling time-on-task.

  Increased student achievement has been perceived in test scores.

  Affective student impact was perceived in terms of improved attitudes or awareness about classroom behavior and time-on-task.

- Concerns and Changes. Educators felt that the TV was more useful for new teachers than for experienced teachers, and that it requires too much time and/or paperwork. Educators recommended that TV should not be used with every teacher, but that it should be expanded to involve those teachers that needed to improve their classroom management techniques.

Factors influencing relative success included: 1) the pilot principals' interest in using TV; 2) teachers' approval of a series of brief observations instead of a single longer observation; 3) the increased student engagement rate from pre to post observation after teachers had improved time management skills. However, few teachers had low engagement rates to begin with, which influenced the recommendation that TV should not be used with all teachers. It appears that TV was accepted by local educators, and helpful for some teachers in improving classroom management.

Talbot County. Talbot County has been implementing TV for one year using a lighthouse school strategy. New LEAs were not required to specify their objectives in September 1982. In June 1983, educators had "partly achieved" three objectives (i.e., training educators to use the model, ensuring a match between instruction, curriculum, and tests, and helping teachers become better organized). The remaining six objectives specified in Table 42 were "hoped for".

- Scope and Intensity. After the first year of implementation (June 1983), TV was being used in one vocational-technical school by four teachers and 80 students in auto mechanics, masonry. carpentry, and agriculture. Teachers were implementing the time variable. The majority of the teachers reported being observed by the principal. They strategized during staff meetings. Fifty percent of the teachers reported making successful changes to improve time-on-task. (Since TV was not designed originally for these kinds of classes, MSDE provided additional related information from the R & D Center for Vocational Education and local educators reviewed modifications with the TV developer.)

- Time. Educators spent an average of 8.5 months on SITIP across the 1982-83 school year. The school administrator reported spending 30 days, and central office staff 14 days on TV. This represented "slightly less" time and energy in comparison to similar previous projects. Central office staff and school administrators combined spent the least amount of time and energy on dissemination (1.00)* and the most effort on inservice and supporting school implementation (3.00 for each activity). The school administrator spent the least time on dissemination and evaluation (1.00 for each activity) and the most effort on inservice (5.00). The central office staff respondent spent the least effort on materials development, inservice and dissemination (1.00 for each activity) and the most time and energy on administration and supporting school implementation (3.00 for each activity).

  Most of the training of teachers was done by the developers and MSDE. Educators rated the interactive support received by the five role groups involved in TV as average (3.00) and above with the exception of the school administrators' rating of central office support (2.00). MSDE received the highest and central office the lowest ratings of support. By June 1983, about 25% of office staff, school administrators, and teachers at the pilot site received information, training, and help.

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* Level of effort (time and energy) was rated on a scale from 0 (none) to 5.00 (a great deal).

- Impact. TV has had an impact on training and on the schools, educators, and students involved. In the area of training, 67% of the teachers reported that they understood the model, however, 67% said that they would like to learn more.

  At the school level, educators have become aware of a new instructional/observational technique and have strengthened their awareness of the importance of good teaching. Central office staff and school administrators have learned a new instructional/observation strategy and have realized the need to structure time well.

  Educators indicated that TV is a worthwhile, workable instructional model. Teachers have improved their skills in a new teaching/observation technique in assessing student attitudes/behavior/needs, and in controlling time-on-task. They have strengthened their attitudes about teaching and about the importance of keeping students on task.

  Educators were unsure about whether student achievement increased as a result of TV. However, students did improve their attitudes about learning and school.

- Participant Concerns. Educators were concerned about the amount of time and/or paperwork required to implement TV. Recommendations included implementing the content variable, increasing central office and MSDE workshops, and dropping the program.

Factors influencing relative success included: (1) alignment of local priority with TV; (2) learning from other TV projects' experience used in planning for implementation; and (3) anticipation of problems (e.g., elementary vs. secondary knowledge base) and use of strategies to avoid negative impact. For their first year, Talbot educators appear to have made good progress.

Summary and Conclusions

The four preceding sections of this chapter each focus on local implementation of one of the models: Active Teaching (AT), Mastery Learning (ML), Student Team Learning (STL), and Teaching Variables (TV). This section examines implementation across all four models under the following headings: planning, scope and intensity of implementation, time spent and responsibilities shared, impact, and participant concerns.

Planning

Table 50 presents the status of objectives in June 1983 across all of the SITIP projects. The objectives can be divided into four categories: student impact (objectives 1, 2, and 9); training (objectives 3 and 4); teacher impact (objectives 5, 7, and 8); and curriculum alignment (objective 6). The level of achievement varied across the four categories, with the highest level in curriculum alignment followed by training, teacher impact, and student impact. These results are strongly influenced by the amount of time and effort that educators spent on the objectives. For instance, educators have been working on curriculum alignment for Project Basic since 1979 and so have a sound foundation on which to build. Local achievement of training objectives was influenced by the fact that provision of information and training for SITIP began in 1980 and has been strongly reinforced by both MSDE and LEA activities since that time. Changes in teachers' behavior have arisen from that training, and achievement of objectives in this category was strongly influenced by the interactive support provided by LEA team members. The three objectives relating to improvement in students' achievement and attitudes can only be achieved after the other categories of objectives have been accomplished. These findings reinforce those of other school improvement studies which have found that major changes affecting students take from three to five years to bring about.

Scope and Intensity of Implementation

During the 1982-83 school year, all 24 school districts were involved in SITIP, 20 implementing a single model, three implementing two models, and one implementing three models. Table 51 summarizes the scope and intensity of SITIP implementation as of June 1983.

Table 50

Status of Objectives: All Models, June 1983

Local Objectives	Number of Projects Addressing Objectives					Status**		
	Total N=29	AT N=7	ML N=7	STL* N=8	TV N=7	% of Projects 1	2	3
1. Improve student achievement (basic skills).	26	6	7	6	7	23	50	27
2. Improve student achievement (other subjects).	22	3	6	7	6	45	45	10
3. Inform local educators about model.	27	6	7	7	7	11	33	56
4. Train educators about model.	26	5	7	8	6	4	61	35
5. Improve teachers' classroom competence.	29	7	7	8	7	3	59	38
6. Ensure match of instruction, curriculum, and tests(s).	18	1	7	4	6	0	39	61
7. Help teachers become better organized.	27	6	7	7	7	4	66	30
8. Improve time-on-task.	25	6	7	5	7	8	56	36
9. Improve students' involvement in learning (motivation).	23	6	5	7	5	13	48	39

* Prince George's County did not submit data on status of objectives in June 1983.

** Status: 1 = Hoped for
2 = Partly achieved
3 = Achieved

Table 51

Scope and Intensity By County: All Models, June 1983

County	Topics	Strategy	#of schools	Type	#of teachers	#of students
Allegany	ML	LS	1	O	22	300
Anne Arundel	ML	LS	1	H	3	150
Baltimore City	ML	PD	5	J/M, H	150	3,332
Baltimore County	ML	LS	3	E	13	325
	STL	PD	2	E, J/M	9	225
Calvert	STL	LS	3	E, J/M	10	300
	TV	LS	3	J/M	23	540
Caroline	AT	LS	2	E	5	122
Carroll	ML	LS	1	J/M	2	161
Cecil	AT	PD	17	E, J/M	40	2,000
Charles	STL	LS	10±	E, J/M	17*	650±*
Dorchester	STL	PD	7	E	8	177
Frederick	TV	PD	2	J/M, H	15	600
Garrett	AT	LS	2	H	11	443
Harford	AT	DW	34	E, J/M	446	19,177
Howard	ML	LS	1	J/M	9	260
Kent	TV	DW	4	E	32	676
Montgomery	AT	LS	1	E	9	170
	STL	LS	1	J/M	10	480
	TV	LS	1	J/M	7	300
Prince George's	STL	CB	No data			
Queen Anne's	STL	CB	1	H	23	900
St. Mary's	AT	CB	5	E, J/M, H	27	1195**
Somerset	TV	LS	1	E	8	217
Talbot	TV	LS	1	O	4	80
Washington	STL	CB	14	E, J/M, H	20	600
Wicomico	AT	DW	12	E	43	1100
Worcester	ML	LS	1	E	4	75
	STL	CB	4	E, J/M	16+	400

*Matthew Henson Middle School only
**Includes some duplicates

Topics: AT=Active Teaching
ML=Mastery Learning
STL=Student Team Learning
TV=Teaching Variables

Strategy: LS=Lighthouse school
PD=Pilot district
DW=District-wide
CB=Capacity building

Type: E=Elementary
J/M=Junior high/middle
H=High school
O=Other

Projects. There were six AT projects, seven ML projects, nine STL projects, six TV projects, and one combined AT-TV project for a total of 29 SITIP projects across the state.

Strategies. LEAs selected one of four implementation strategies: (1) district-wide, (2) pilot-district, (3) capacity building, and (4) lighthouse school. The lighthouse school strategy was the most popular (16 projects), followed by pilot district and capacity building each used for five projects, and district-wide used for three projects.

For AT, two projects had a district-wide strategy, two had lighthouse schools, one had a pilot-district, and one a capacity building strategy. For ML, there were six lighthouse school projects and one pilot-district project. For STL, four projects had capacity building strategies, three had lighthouse schools, and two had pilot-districts. For TV there were four lighthouse school projects, one pilot-district project, and one district-wide project. The combined AT-TV project used a lighthouse school strategy.

During the first 18 months of SITIP -- ending June 1982 -- it was found that:

> The implementation strategy determines how the work is shared among role groups, and how the burdens shift among role groups over time. The implementation strategy plus the scope (number of schools, teachers, curricular subjects, grade levels, and amount of time for the innovation to be used for each class or subject) determine how much work is to be done within a given LEA. (Roberts, et al., 1982)

Activities during the 1982-83 school year continue to support these findings. Also, there is a relationship among the implementation strategy used, the nature and extent of central office staff involvement, and the extent to which the model(s) used are perceived by central office staff to fit LEA priorities. For instance, the district-wide strategy required central coordination and considerable central office staff involvement, and was used where the model fit closely with a local priority. The pilot-district strategy was not quite as demanding and (with the exception of two LEAs) was used where the model fit local priorities.* The lighthouse school strategy, implemented as designed at all sites, required a fit between the model and the school's priorities (not necessarily the district's priorities), and central office administrative support. Expansion occurred beyond the lighthouse site only when: (1) there was impact on student achievement; (2) teachers liked the model; and (3) central office staff provided additional support (usually to make the necessary arrangements for staff in other schools to attend training). The capacity building strategy was centrally coordinated in two LEAs and school-based at three sites, with a fit between the model and LEA priorities at only one of the latter The greatest weakness of this strategy was that once teachers were trained, in most cases they had high autonomy and low interactive support (reflecting low involvement of central office staff), and the fidelity and frequency of implementation was not as great as for other strategies.

These findings suggest that the closer a model was to existing LEA priorities the more likely it was to draw central office involvement, and subsequently lead to strong and widespread classroom use. Conversely, when the model did not fit a district priority, it could be well implemented in a school where it fit that school's priorities but was not likely to be widely used, and its survival depended more on the individual teachers involved. Implementation strategies initially selected by LEAs reflected the amount of energy and commitment of local educators which was based on the fit -- as they perceived it -- between the model and their priorities. If, subsequently, it became apparent that the fit was greater or smaller than at first perceived, the strategy was changed (e.g., Kent County changed from a lighthouse to a district-wide approach when central office staff decided that the model fit one of their priorities).

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* In both cases (of exception) the model as implemented did not support local priorities: expansion was curtailed and central office support was low.

Schools, teachers, and students. Over 986 teachers and 34,955 students in 139 elementary and secondary schools were involved in SITIP. The approximate number of schools, teachers, and students involved in each model is presented in Table 52. Of the 139 schools involved, 65% were elementary, 34% were secondary, and 1% were "other" (i.e., K-12, vocational-technical). Fifty-two percent of the schools, 58% of the teachers, and 69% of the students in SITIP were using the AT model. This high degree of AT implementation was influenced by the strategies selected by the LEAs which, in turn, were influenced in part by the model's relatively low complexity. However, of greater influence was the fit of the model to local priorities; the model was perceived as a viable instructional method (particularly for mathematics).

Across the entire state, more than 11% of the schools were involved in SITIP (AT -- 6%, ML -- 1%, STL -- 3%, TV -- 1%).

Fidelity. Fidelity relates to the extent to which teachers implemented the models as designed. AT required the implementation of six components, ML required ten components, and STL five components (see Chart 10). For TV, educators could implement the time variable in a variety of ways.

AT had the greatest fidelity, with 72% of the teachers implementing all six components, as compared to ML where 23% of the teachers carried out all ten components, and STL where 33% of the teachers carried out the five required components. For AT, no single component was addressed by less than 88% of the teachers, as compared to ML (52%) and STL (76%).

Table 52

Scope and Intensity Summary: All Models, June 1983

Models	Projects*		Schools**		Teachers		Students	
	#	%	#	%	#	%	#	%
Active Teaching	7	24	72 E 52 S 20	52	572	58	24,037	69
Mastery Learning	7	24	13 E 4 S 8 O 1	9	203	21	4,603	13
Student Team Learning	8	28	42 E 28 S 14	30	113	11	3,732	11
Teaching Variables	7	24	12 E 6 S 5 O 1	9	98	10	2,583	7
Total	29	100	139 E 90 S 47 O 2	100	986	100	34,955	100

* Although Prince George's County implemented STL in about 10 schools, no "hard" data were available at the end of the school year. Therefore, this LEA is not included in these results.

** One school is implementing two projects -- AT and TV. It is counted once under TV.

Schools: E = Elementary
S = Secondary
O = Other

Chart 10

SITIP Fidelity of Implementation: 1982-83

Models and Components of Student Team Learning*	Teachers Implementing	
	N=62	%
STAD is implemented.	37	59.7
TGT is implemented.	28	45.2
Jigsaw is implemented.	15	24.2
TAI is implemented.	0	0
1. Each team includes a mix of kinds of students	0	0
(on given criteria).	59	95.2
2. Materials are available for peer tutoring, team practice, and individual and tournament quizzes.	52	83.9
3. Quiz/tournament scores relate to individual and team achievement.	47	75.8
4. Peer tutoring takes place a great deal.	51	82.3
5. Successes are publicized.	52	83.9

Variables and Components of Teaching Variables*	Teachers Implementing	
	N=47	%
The "content" variable is implemented.	14	29.8
The "time" variable is implemented.	29	61.7
1. Other teacher(s) have collected time-on-task data, observing me.	27	36.2
2. My principal (or vice-principal) has collected time-on-task data, observing me.	34	72.3
3. A central office supervisor collected time-on-task data, observing me.	23	48.9
4. Data collected on my class indicated that time-on-task was such that I did not need to make changes.	22	46.8
5. Observation results are discussed in staff meetings and we help each other find strategies to improve time-on-task.	21	44.7
6. I have made changes in my class to improve time-on-task.	24	51.1
7. Data collected on my class indicated that time-on-task improved.	17	36.2

Components of Mastery Learning	Teachers Implementing	
	N=48	%
1. Objectives are specified.	43	89.6
2. Objectives are broken down into component skills.	38	79.2
3. Curricula (texts, materials) are matched to objectives.	37	77.1
4. Instruction given matches curricula and objectives.	42	87.5
5. Tests match objectives.	46	95.8
6. Tests include items from both lower and higher order thinking skills.	35	72.9
7. A "no fault" formative test is given for each unit.	40	83.3
8. "Corrective" and "enrichment" activities are given after formative tests.	47	97.9
9. Summative tests are given at the end of each unit.	47	97.9
10. Records are kept per class per student per objective on level of mastery.	25	52.1

Components of Active Teaching	Teachers Implementing	
	N=57	%
1. Pre-lesson development.	51	89.5
2. Lesson development.	53	93.0
3. Controlled/guided practice.	50	87.7
4. Independent practice.	52	91.2
5. Homework assignments.	52	91.2
6. Reviews.	51	89.5

* For Student Team Learning and Teaching Variables, unnumbered items represent specific models or variables. Implementers could use any one or all models or variables.

For TV, the majority of the educators (62%) implemented the time variable. Most of the teachers (72%) had been observed by principals and vice-principals, and 45% reported strategizing during staff meetings. Fifty-one percent made classroom changes to improve time-on-task and 36% reported an improvement in student engagement rate.

Time Spent and Responsibilities Shared

This section summarizes the amount of time spent on SITIP activities for all four models by each role group during the 1982-83 school year.

Teachers' use of time. The average number of months' involvement by teachers for three models (AT, ML, TV) was eight months, with no one involved for less than five months. AT implementation was continuous for the specified number of months. With the exception of some ML sites, teachers did not use ML and STL continuously during those months, but used them for specific units of instruction. TV teachers were usually observed at the beginning and end of the time, applying improvement strategies in the interim, if appropriate. During the period that teachers were directly involved, the average time spent during a given week ranged from 21% (STL) to 39% (AT). For three models (AT, ML, STL) elementary teachers spent less time (15% to 23%) than did secondary teachers (23% to 51%). This reflected the fact that elementary teachers used a model for only one or two curricular subjects, while any secondary teachers involved used the model for his/her subject area specialty with a relatively large number of classes. For TV, secondary teachers spent 19% of their time and elementary teachers spent 33% of their time teaching subjects for which "time" observations were conducted or the "content" variable addressed. This reflected the higher credibility which the TV data base had among elementary teachers.

In order of investment of classroom time, models were: AT, ML, TV, STL. Investment varied from one site to another, influenced strongly by administrative decisions and the amount of development work completed in the first year. Factors working against high investment of classroom time included: (1) need for materials (STL, ML); (2) need for preparation time (ML, STL); (3) pressure to cover the curriculum in a given amount of time (ML, STL); (4) relative suitability of a model to the curriculum (STL); (5) relative suitability of a model to a grade level (TV, secondary); and (6) negative experiences in early implementation which were not totally resolved by local administrators (some sites for AT and ML, perceived most strongly for TV). Factors facilitating high investment included: (1) availability of materials (ML, STL); (2) low complexity of the model (AT); (3) suitability of the model to a curriculum and grade (AT); (4) successful application experienced by teachers early in the project (AT, STL); and (5) successful application facilitated by local administrative support (all models in some sites, but perceived most strongly for STL).

Local administrators' use of time. The average amount of time invested by central office staff and school-based administrators ranged from nine or ten days for AT and STL to 23 days for ML. Individual administrators spent as few as two days on SITIP to an almost full-time commitment. With the exception of TV, central office staff spent almost twice as much time as school-based administrators. In all cases, combined time of administrators was invested least in materials identification and/or development. For three models (AT, ML, STL) most combined time was spent on supporting school implementation and administration. The other three areas of activity -- inservice, dissemination, evaluation -- took relatively little time. Since appropriate materials were essential for ML and STL, and since administrators invested so little in this activity, classroom use was reduced unless teachers already had materials or were given release time for development. Given teachers' concerns and needs relating to TV, greater investment in support (rather than administration) was desirable at some sites.

Interactive support. This area of activity included both logistical and affective support. It was expected that all role groups (teachers, school-based administrators, and central office staff) needed to help each other achieve success, and that assistance from MSDE technical assistants (TAs) and developers was also desirable. Support activities and behaviors included: information exchange; training (both traditional inservice and one-on-one coaching); provision of materials and other resources; arrangements for teacher release time; assistance in development of quality materials, tests, record-keeping systems, etc.; acknowledgement and publication of success; and supportive use of feedback to encourage improvement. Support was rated for all role groups by the three local role groups (on a five point scale, 1=very poor, 5=excellent), and results are presented for all four models in Table 53. Overall ratings range from just above average (3.29) for developers, to very good (3.94) for teachers. (Last year, ratings ranged from 3.39 for MSDE to 3.78 for school-based administrators.) In general, ratings of local support reflect effort invested by a given role group. Ratings of "external" assisters are influenced primarily by contact frequency or visibility. For instance, since central office staff were more often in contact with the MSDE TA for AT, their ratings of his support were higher than ratings given by the other two role groups. Also, since STL developers attended follow-up training sessions and conducted several on-site workshops, ratings of their support

Table 53

Perceptions of Support Received: All Models, 1982-83

Support Groups Models/Respondents	N	Teachers	School Administrators	Central Office Staff	MSDE	Developers
Active Teaching	112	3.79	3.83	3.79	3.61	3.24
Mastery Learning	75	4.11	3.95	3.81	3.64	3.21
Student Team Learning	86	4.12	4.12	3.82	3.94	3.72
Teaching Variables	61	3.74	3.64	2.98	3.29	2.90
Totals	334	3.94	3.90	3.65	3.90	3.29

Mean ratings range from a low of 1.00 (very poor) to a high of 5.00 (excellent).

were higher than ratings awarded to other developers. Ratings of developers for AT and TV are influenced by other factors. The AT developers provided training only for the 1981 orientation and summer institute. However, for subsequent training events the MSDE TA brought in other nationally recognized R&D staff whose work supported AT. Some implementers considered those people as developers, and rated them above average. TV developers conducted site-specific training and hosted meetings for local participants, but these rarely involved teachers and thus the developers were rated below average (with teachers' ratings lowest).

While ratings of developers' support are relatively unimportant at this stage of implementation, the somewhat low ratings for central office support (below average -- 2.98 -- for TV, to 3.82 for STL) are of concern where projects are not school-based, and where the LEA expects SITIP implementation beyond a single school.

Impact

This section discusses impact for all models on school systems, central office staff, schools, school administrators, teachers, and students.

School systems. As can be seen in Table 54, the most common impact at the district level was the commitment and sharing among educators (reported for AT and ML) which was encouraged by the SITIP design. Also, for two models, policies were put into practice to facilitate implementation and encourage institutionalization.

Central office staff. Knowledge of a new teaching or observation strategy was noted by central office staff for all models, plus acknowledgement of AT's influence on improving organization for instruction. (See Table 54.)

Table 54

Impact of Implementation on Administration
Schools, and Districts: All Models, 1982-83*

Impact**	School Systems				Central Office Staff				Schools				School Administrators			
	AT	ML	STL	TV	AT	ML	STL	TV	AT	ML	STL	TV	AT	ML	STL	TV
Knowledge of a new teaching strategy			2		2	3	3				3	4	3	5	3	
Knowledge of time-on-task																2
Knowledge of effective observation/ supervision method/criteria								5					3			
Knowledge of learning (theory, practice)						2										
Belief in traditional teaching													2			
Commitment/sharing among educators	2	4								5	2	3				
Continuity/consistency across classes									4							
Interest/enthusiasm of students/teachers (e.g., in subject area)									2		4					
Better management, organization or instruction					2							3	2			
Appreciation for teachers, recognition of success											3		2	2		
Support (e.g., arranging common planning time) for teachers										4						
Closer monitoring of teaching									2							
Policy to release teachers to train others or coordinate project		2														
Policy to implement for a given subject or grades	3															

Role Groups and Models

* Reported in number of LEAs:
Active Teaching N=7, Mastery Learning N=7, Student Team Learning N=8, Teaching Variables N=6.

** Impact areas reported only when stated by two or more LEAs for a given model.

Schools. The strongest area of impact for ML, STL and TV was sharing among educators with continuity and consistency across classes being the strongest impact for AT. Interest, appreciation, and support were valued, as was closer monitoring and better organization for instruction. (See Table 54.)

School administrators. Principals and other school-based administrators for all models valued new teaching or observation strategies, gained an appreciation for teachers' capability (AT, ML), and strengthened their belief in traditional teaching (AT). (See Table 54.)

Teachers. During the 1982-83 school year, all role groups received and conducted training, with most conducted by MSDE for AT, and most by school-based staff for the other three models. Since few teachers were time-on-task observers for TV, they received less training than did school administrators or central office staff. Training facilitated understanding of the model and of ways in which to initiate and carry out planned change. The impact of involvement in SITIP, in terms of teachers' understanding the models and improving their teaching ability, is summarized in Table 55, with the percent of teachers noted for each area of impact for each model. The relatively low perceived impact of TV may have been influenced by the amount of training, by the number of teachers who were found to have satisfactory engagement rates (time-on-task) and therefore saw no need to change, and/or by the interactions between observers and teachers.

Table 55

Percent of Teachers Impacted by Involvement: All Models, 1982-83

Impact \ Models	AT	ML	STL	TV
teachers understanding model	72	73	80	64
teachers improving teaching ability	66	64	50	28
teachers seeing no change in teaching ability	13	16	27	36

Each of the three local role groups rated impact on teachers in terms of enjoyment, increased knowledge, and increased skills (on a five point scale where 5.00 = strongly agree). Responses are summarized in Table 56. Mean ratings in all cases indicated that impact on teachers in all areas did occur to some extent with greatest certainty among local educators for STL and least for TV.

More specific kinds of impact on teachers, in terms of increased knowledge and skills and strengthened attitudes, are summarized in Table 57. For each kind of impact for each model, the number of LEAs where that impact was found is presented. Since most LEAs hoped that teachers would improve skills relating to instruction, impact in that category is particularly important. Since each model emphasizes particular activities, comparisons are not always relevant. However, the first three skill areas listed in Table 57 are addressed by all four models, and results indicate that a large number of LEAs found that teachers made improvements in teaching/observing, classroom management, and assessing and addressing student needs. For three models (AT, ML, STL), these results indicate that in 50% or more of the LEAs impact on

Table 56

Instructional Impact as Perceived by
Survey Respondents: All Models, 1982-83

	Models				
Impact on Instruction N=	AT 122	ML 76	STL 89	TV 63	Total 350
Instructional Value					
Works in classroom.	4.47	4.35	4.42	4.00	4.35
Is worth the work it takes.	4.29	3.85	4.18	3.73	4.07
Is a worthwhile teaching approach.	4.38	4.28	4.43	3.79	4.26
Impact on Teachers					
Teachers enjoy it.	4.02	3.77	4.17	3.56	3.92
Teachers have increased knowledge.	4.08	4.08	4.14	3.60	4.01
Teachers have increased skills.	4.05	4.08	4.06	3.51	3.96
Impact on Students					
Students enjoy it.	3.88	4.09	4.37	3.52	3.99
Students are less disruptive.	3.88	3.16	3.65	3.11	3.62
Students' achievement has increased.	3.59	3.76	3.76	3.08	3.58
Students are learning more.	3.61	3.67	3.60	2.81	3.48
Students' general behavior is better.	3.73	3.09	3.57	3.08	3.43
Time					
Teachers spend more time preparing students.	3.09	4.01	3.93	2.69	3.43
Teachers cover curriculum in less time.	3.13	2.51	2.56	2.79	2.79

Mean ratings range from 1.00 (strongly disagree) to 5.00 (strongly agree).

AT=Active Teaching, ML=Mastery Learning; STL=Student Team Learning; TV=Teaching Variables

Table 57

Impact of Implementation on Teachers: All Models, 1982-83

Impact: teachers have...	Models			
	AT	ML	STL	TV
N* =	7	7	8	6
Increased knowledge				
-of components or procedures of effective teaching	7	5		2
-of time-on-task				2
-of curriculum alignment and program		4		1
-of research and learning theory		3		2
-about teaching and learning through staff development/observation			3	
Improved skills				
-in a new teaching/observation technique	5	7	7	5
-in classroom management/organization/planning	6	7	6	3
-in assessing and addressing student needs	6	3	4	3
-in specific components of effective teaching	3	4		
-in effective use of time	7			2
-in use of peer tutoring			1	
-in working with students (e.g., motivation)			4	
-in curriculum development		1		
-in instruction	5			
Strengthened attitudes/perceptions				
-about teaching	3	6	7	4
-of teachers' confidence or self-image	3	2		
-of the value of traditional teaching	2			
-of the value of specific components of effective teaching	1	4		
-that the larger group must be emphasized	3			
-of what students can accomplish		4		
-of how well students can work together			5	
-of the importance of keeping students on task				2
-that teachers must teach every day	2			

* N is the number of LEAs implementing a given model.

AT=Active Teaching; ML=Mastery Learning; STL=Student Team Learning; TV=Teaching Variables teachers reflected the objectives or claims of the model(s) implemented. For TV, appropriate impact was weaker (e.g., knowledge of time-on-task in 33% of LEAs, skill in effective use of time in 33% of LEAs), which may be related to the fact that 46.8% of teachers did not need to make changes to improve time-on-task or may have been influenced by the strategizing for improvement (44.7% of teachers were involved in team strategizing). (See Chart 10.) In general, impact on teachers was positive and clearly related to the model(s) implemented.

Students. Impact on students as perceived by local educators is presented in Table 56. While educators agree that students enjoy ML and STL, they are less certain about other models, and are tentative for all models about improved behavior, learning, and achievement. In general, educators rate AT and STL as having slightly more impact on students than ML or TV.

More specific kinds of impact on students, in terms of improved attitudes or awareness, increased achievement, and activity benefits resulting from better instruction are summarized in Table 58. For each kind of impact for each model, the number of LEAs where that impact was found is presented. Across all models, the strongest areas of impact perceived by local educators were: improved student attitudes toward learning and school and about their ability to learn; increased student achievement as indicated by test scores, and mastery and retention of facts and skills; and benefits derived from instruction in a structured, consistent format with a clear understanding of teacher expectations. In general, educators offered statements indicating that ML, AT, and STL had somewhat more impact on students than TV.

Table 58

Impact of Implementation on Students: All Models, 1982-83

Impact on Students	Models			
	AT	ML	STL	TV
N* =	7	7	9	6
Improved attitudes or awareness				
-about their learning ability	3	5	3	
-about their learning responsibilities	2	2		
-about learning/school	7	4	8	2
-of their strengths and weaknesses		3		
-about tests		2		
-about classroom behavior/time-on-task				4
-of teacher interest				1
-of value of being organized				1
Increased achievement				
-in test scores	5	5	4	3
-in grades	1	1	4	
-in general		1	2	
-in mastery/retention of facts and skills	4	4	3	
-in problem solving and conceptual understanding	2	1		
-especially for lower achievers		1	2	
Benefitted from better instruction which provides				
-a structured, consistent format	4	5		
-a clear understanding of teacher expectations	4	2		1
-a greater variety of activities			3	1
-effective learning activities	3			
-a more complete instructional program			1	1
-better use of time/more materials covered	4			
-opportunity for independent work	1			
-opportunity to relearn (after "no fault" test)		3		
-opportunity to advance			1	
-special benefits for slower students	1			
-more individualized instruction	1			
-peer tutoring/working in groups			3	
-large group instruction	1			
-more organization				1
-more attention to academic content				1
-fewer gaps in skill development		1		
-competition			1	
-less pressure		1		
-recognition of success			1	

* N is the number of LEAs implementing a given model.

AT=Active Teaching; ML=Mastery Learning; STL=Student Team Learning; TV=Teaching Variables.

In some cases, educators' perceptions were supported by data from measures to which students had responded. All 29 projects agreed to collect and summarize student data on attitudes and achievement, but relatively few actually did so.

Student attitude data were summarized by projects using either a brief questionnaire or a longer inventory (Learning Environment Inventory for grades 5-12, My Class Inventory for younger students).* Results are summarized in tables 59, 60, and 61.

The questionnaire was used for three models by seven LEAs (2,731 students). Results were positive for all items at all sites. Students knew the difference between SITIP and regular instruction. They found the lessons relatively easy, enjoyed and understood them, considered that in comparison to regular lessons they were better, and students learned more and got better grades. Overall, this last criterion (better grades) and the first (ease of lessons) drew the least certain responses from students, with the total mean

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* The Learning Environment Inventory (LEI) measures 15 dimensions, eight of which were relevant for assessing impact on student attitudes. Four dimensions are included in the My Class Inventory (MCI). Each is defined: Competitiveness--Students compete to see who can do the best work; Satisfaction--Students enjoy their class work; Difficulty--The work of the class is difficult; Friction--There are tensions among certain groups of students that tend to interfere with class activities; Disorganization--The class is disorganized; Apathy--Failure of the class would mean little to individual members; Favoritism--Certain students are favored more than the rest; Environment--The books and equipment students need or want are easily available to them in the classroom.

Students answered the LEI items using a four-point scale ranging from 1.00 (strongly disagree) to 4.00 (strongly agree). The higher the score, the higher the agreement with the dimension being measured. MCI responses were "yes" or "no" and class percentages of agreement are reported. High agreement is desirable for satisfaction and environment; for all other dimensions except competitiveness low scores are desirable. Competition may or may not be considered desirable depending on the philosophy of the school.

Table 59

Student Attitudes (Questionnaire): All Models 1982-83

Models	Active Teaching			Mastery Learning		Student Team Learning						
LEAs	Cecil		St. Mary's	Allegany	Carroll	Baltimore County		Dorchester County		Worcester County		Total
Dimensions / Grades	(K-3)	(4-8)	(9-12)	(K-12)	(6-8)	(3)	(5-8)	(3)	(4-5)	(1)	(2)	
	N=app. 37	N=app. 810	N=422	N=300	N=148	N=27	N=app. 170	N=app. 165	N=app. 600	N=35	N=17	N=2731
1. Recognition of differences	4.68	3.83	3.91	3.29	4.53	4.04	3.82	4.68	4.36	4.54	5.00	4.02
2. Understanding of lessons	4.36	4.50	4.23	4.19	4.64	4.93	4.60	4.66	4.66	4.48	4.71	4.65
3. Enjoyment of lessons	4.08	3.91	3.88	4.09	4.33	4.59	4.32	4.31	4.52	4.15	4.76	4.45
4. Ease of lessons	3.13	3.71	3.49	3.53	3.97	4.44	4.04	3.92	3.68	4.71	4.76	3.84
5. Learning of lessons	4.46	4.22	3.93	3.67	3.97	4.44	3.97	4.43	4.26	4.12	4.65	4.26
6. Better grades	4.39	3.75	3.36	3.71	3.78	4.07	3.70	3.95	3.67	3.70	4.71	3.78
7. Better lessons	4.03	3.96	3.75	3.81	3.98	4.74	4.11	4.16	4.30	4.02	4.41	4.26

Mean responses range from 1.00 (not at all) to 5.00 (yes a lot). The higher the score, the higher the agreement with the dimension measured.

Table 60

Student Attitudes (Learning Environment Inventory): STL and ML, 1982-83

Dimensions*	Populations					
	National Test Norms	Charles STL		Anne Arundel ML	Baltimore City ML	Total STL & ML
	X	Control N=50	X N=50	X - Post N=79	X - Post N-61	X N=190
1. Competitiveness	2.43	2.51	2.58	2.53	2.76	2.62
2. Satisfaction	2.40	2.48	2.56	2.36	2.52	2.46
3. Difficulty	2.67	2.51	2.55	2.61	2.07	2.42
4. Friction	2.40	2.74	2.66	2.67	2.73	2.69
5. Disorganization	2.35	2.48	2.37	2.44	2.26	2.36
6. Apathy	2.54	2.51	2.47	2.48	2.47	2.47
7. Favoritism	2.03	2.54	2.21	2.07	2.32	2.19
8. Environment	2.40	2.80	2.82	2.82	2.49	2.71

LEI - Mean responses ranged from 1.00 (strongly disagree) to 4.00 (strongly agree). The higher the score, the higher the agreement with the dimension measured.
National test norms were based on 1,048 subjects in 65 classes in a variety of subject areas during 1969.

* Higher scores are desirable for satisfaction and environment; for all other dimensions except competitiveness, low scores are desirable. Competitiveness may or may not be considered desirable depending upon the philosophy of the school.

Table 61

Student Attitudes (My Class Inventory): AT and ML, 1982-83

LEA	Caroline - AT				Worcester - ML*			
	Pre N=524		Post N=573		Pre N=4		Post N=69	
Dimensions	% Yes	% No	% Yes	% No	% Yes	% No	% Yes	% No
1. Competitiveness	75	25	70	30	75	25	68	32
2. Satisfaction	68	32	65	35	89	11	68	32
3. Difficulty	38	62	36	64	14	86	38	62
4. Friction	69	31	65	35	44	56	56	44

* While pre and post tests in Caroline and post tests in Worcester were completed by students, pre tests in Worcester were completed by teachers who predicted student post test responses.

on those items pulled down by responses from older students (grades 4-12) -- possibly because they are more discriminating than younger students. In general, mean scores for STL were higher than for the other two models. Given the nature of the model, higher scores might be expected for "enjoyment of the lessons" since most students like working in groups. Other responses (in comparison to AT and ML) may have been influenced by that enjoyment and also by the fact that more STL students were younger. No overall means or item means per respondent group were lower than 3.36 (better grades). The two items most related to project impact (better grades and better lessons) drew mean responses of 3.70 and 4.02, respectively, which indicate project success as perceived by students.

Results of the LEI indicate that the means for each project and across the three projects were better than national norms on four dimensions: satisfaction, difficulty, apathy, and environment. There was room for improvement in relation to friction, disorganization (except in Baltimore City), and favoritism. Results of the MCI indicate room for improvement in relation to friction. There were no significant differences between models, regardless of the fact that STL is designed to reduce friction and avoid favoritism.

Cognitive achievement data from standardized mathematics tests were reported by four projects -- one in AT and three in ML. In all cases, gains were greater than normally expected, with most significant improvement found for low or middle achieving students. At one project site, standard deviation narrowed and the year's growth was four months (grade equivalent, CAT) greater than expected. Eight projects reported databased on teacher-made criterion-referenced tests (AT=2, ML=4, STL=2). In most cases, SITIP students did better than students in "regular" classes, with gains made most consistently by below average students. Data supported claims for ML that at least 80% of the students achieved mastery (established at 80% or more of the course objectives mastered).

These results support developers' claims for AT, ML, and STL. However, direct cause-and-effect conclusions should be made with caution, attending to the nature and extent of implementation relating to a given set of results.

Participant Concerns and Recommendations*

Concerns were reported by participants of all projects, and were categorized as being related to the model(s) or to the general process of implementation. (See Table 62.) Most model-specific concerns related to management -- the need for time and materials for effective implementation. Many concerns related to consequences -- the impact on particular kinds of students, on curriculum, and on discipline and the assessment of that impact. Teacher concerns are also consequential, with some personal overtones. Concerns about the design and some of the assessment concerns were related to refocusing -- a dissatisfaction with the model as implemented and a desire to do something different. General implementation concerns were reported for three models (there were none for STL). All of them related to management, with some personal or consequential overtones. These results are what might be expected given the age(s) of the projects.

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* In the 1982 report, concerns were analyzed using the Stages of Concern (SoC, developed by the Center for Teacher Effectiveness at the University of Texas). In general terms, that same framework is used here. Stages are roughly developmental (Awareness, Information, Personal, Management, Consequences, Collaboration, Refocusing) as an individual or group learns about an innovation, uses it, and fits it into existing activities. Concerns in earlier stages need to be satisfactorily addressed before participants can be expected to move to another phase of activity.

Table 62

Participant Concerns: All Models, 1982-83

Concerns		Models			
		AT N=7	ML N=7	STL N=8	TV N=6
Model Concerns					
Time	-- allocations too rigid	4			
	-- requires too much record-keeping/ paperwork		1	2	3
	-- requires too much student testing		1		
	-- requires too much in general		7	3	
	-- requires too much preparation/scoring			4	
Materials	-- need enrichment activities		2		
	-- need materials that fit LEA curriculum			1	
Students	-- holds back talented Ss	1	5	2	
	-- remedial Ss go off task			1	
	-- weak Ss depend on strong Ss			1	
	-- absentees hard to handle			1	
	-- grouping is difficult		1		
Discipline	-- less teacher control, more noise			2	
Curriculum	-- does not fit all subjects/grades	4	2		
	-- coverage is reduced		1		
Teachers	-- creativity is inhibited	6			
	-- observation creates fear, pressure				2
	-- model more useful for new teachers				1
Assessment	-- achievement is difficult to measure			1	
	-- point system (bumping) is not popular			2	
	-- checking should not be done by Ss	2			
Design	-- lack of research base				1
	-- complex, difficult to implement				2
	-- coding categories are judgmental				2
Implementation Concerns					
Insufficient time			2		2
Insufficient central office support					1
Poor coordination (model, materials, management)		3			
People and resources not used to meet project needs		5			
Inflexible budget process			1		
Unclear evaluation guidelines			1		
No monitoring of observers					1
Leaving class to teacher substitutes					1
Poor communication -- teachers don't know why model is used					1
Poor attitude/teacher apathy					1
Teachers not engaging students in learning		1			

N=number of LEAs implementing a given model.
AT=Active Teaching; ML=Mastery Learning; STL=Student Team Learning; TV=Teaching Variables.

Recommendations were made by participants of all projects, and were categorized into six general areas: learning, teachers, classroom use, implementation process, interactive support, and expansion/revision. (See Table 63.) Learning recommendations related to the SoC "information" stage, and reflected a cycling of sophistication and appreciation for on-going training and assistance: participants have learned and want to continue learning -- sometimes in a particular way or in a particular area of expertise. Recommendations for teachers related to the "personal" SoC stage and indicate that in some cases there is fear, resentment, or confusion that needs to be overcome (ML, STL, TV). Classroom use and implementation process recommendations related to two levels of management, and indicate that local implementers have become sufficiently familiar with the models to identify (and want to overcome) barriers to successful use. The AT recommendation for situational adaptation suggests a need to clarify understanding of the model how it is explained, and how it is implemented). There are fewer management recommendations for STL than for other models, which is somewhat surprising given the number of concerns about time and students. Recommendations classified as "management" were influenced by interest in consequences. The "collaboration" stage related to what others are doing -- interactive support -- and most recommendations in this group indicate that school-based staff are not ready to take full responsibility for implementation (and perhaps should not be expected to do so). Recommendations about expansion or revision related to the refocusing stage, and mostly indicate that local educators value the models enough to want expansion (although opinions are divided for TV between expansion and termination and reflect concerns about the design and the way some teachers in some LEAs react to it).

Table 63

Participant Recommendations: All Models, 1982-83

	Recommendations	Models			
		AT N=7	ML N=7	STL N=8	TV N=6
Learning	-- provide training and follow-up assistance	4		2	2
	-- provide research updates on school improvement, teacher effectiveness	1	1		
	-- provide research results before implementation			1	
	-- encourage teachers to increase knowledge & skills		3	1	
	-- provide more specific instructional improvement ideas				1
	-- allocate resources for classroom observation			1	
Teachers	-- reduce burden on Ts			2	
	-- have only voluntary participation (it's not for every T)		2	2	1
	-- help Ts see value of model				1
	-- compensate Ts for after school activities		2		
Classroom Use	-- allow situational adaption	3			
	-- maintain fidelity (and monitor)	2			
	-- allocate/adjust use of time	3			1
	-- provide materials	1		1	
	-- sequence units more carefully		1		
	-- have ability grouping/smaller classes	2	1		
	-- develop record-keeping system (computerized)		1		
	-- develop strategies to deal with absentees	1			
Implementation Process	-- allocate time (development, paperwork, preparation	1	5	1	2
	-- assign new leadership				1
	-- do not add model on top of LEA priority				1
	-- do not begin in first few days of semester				1
	-- use earlier in the year			1	
	-- evaluate effectiveness	1	2		
Interactive Support	-- increase funding	1	2	1	1
	-- increase central office support	1			1
	-- increase MSDE/central office cooperation to help Ts solve problems	1			
	-- increase MSDE assistance		1	1	
	-- encourage more networking among and within LEAs		2		2
	-- provide or develop materials			1	
	-- involve more Ts in curriculum development		2		
Expansion Revision	-- drop the program				3
	-- increase involvement schools/grades/subjects	6	6	6	3
	-- try another model	2			
	-- use every day	1			
	-- use for the full year	3			
	-- use another part/technique of model				2

N=number of LEAs implementing a given model.
AT=Active Teaching; ML=Mastery Learning; STL=Student Team Learning; TV=Teaching Variables.

If a project is to succeed (if SITIP is to be successful), concerns and recommendations should be addressed by MSDE TAs and LEA teams. For AT, the most critical issue is local perceptions of the fit of the model to specific grades, subjects, or students (as grouped). For ML, the most critical issue is cost-effectiveness in terms of time allocated for unit and test development, and the subsequent record-keeping, in relation to the perceived value of the model. For STL, the most critical issue is cost-effectiveness in terms of teachers' investment in relation to impact (including discipline) on various kinds of students. For TV, the most critical issue is the perceptions -- fear, apathy, resentment (primarily of teachers) -- about local implementation decisions and about the model design. While those issues suggest negative impact in some sites, it should be noted that they are not pervasive and do not out-weigh the positive impacts reported earlier.

Conclusions

While processes of implementation based on the research on planned change were recommended for all models in all LEAs, and TAs encouraged local educators to attend to such principles as participatory decision-making, two-way communication, training and support, and appropriate investment of time and energy, those processes of implementation and principles were not always applied.* When they were applied, implementation went sufficiently smoothly for energy to move gradually from establishing structures, relationships, and expectations toward actual classroom use. When there were arbitrary administrative decisions, top-down or incomplete communication, low support by central office staff, and insufficient time allocated for materials development or group planning by teachers, implementation problems occurred.

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* In some cases, the responsibility for the low level of application was shared with the assigned TA. In other cases, the TA's efforts were disregarded by local staff.

At the local level, these principles or practices were generally referred to as interactive support, and, depending on the nature and extent to which they were applied, had positive impact or created barriers to success. (See Table 64.)

Impact was made on student achievement by three models (AT, ML, STL), with the strongest evidence of success in mathematics and reading/language arts for AT and ML. Positive results were most apparent when either of those models was used consistently over a period of time for a given subject and grade.

Impact was made on student attitudes to some extent for all models. Data summarized by 12 projects (AT, ML, STL) indicated that SITIP students enjoyed the lessons, did not find them difficult, and wanted to succeed. Friction among students, and their perception of favoritism and disorganization needed to be addressed at some sites. While teachers believed that for STL students self-esteem and willingness to work with others increased, student data for STL indicated no differences for that model in comparison to AT or ML.

Impact was made on teachers' knowledge for all models through training. Skills in a new teaching/observation technique increased through classroom practice and coaching. Positive attitudes about teaching were strengthened as teachers experienced success.

Impact was made on a school (the faculty and how instructional matters were dealt with) through commitment and sharing among teachers (ML, STL, TV), and provision of support (ML) and recognition of success (STL) by school administrators (usually the principal). Staff interest in teaching/learning increased (AT, STL); there was more continuity across classes (AT); better management of instruction (TV); and closer monitoring of teaching (AT).

Table 64

Barriers and Facilitators to Successful Implementation

Barriers	Facilitators
Heavy reliance on training (ML, STL) Insufficient resources for training (STL) No follow-up assistance (STL)	Training and assistance responsive to Ts' expressed needs (AT, ML, STL, TV)
Rationed resources, broad development (ML)	T time & skill to develop materials (AT, ML, STL) Resources allocated for development
T adapt model (STL) T perceive no credibility of model (TV)	Fidelity understood, advocated, & acknowledged by SA & CO (AT, ML, STL)
CO maintain administrative control, but expect work to be done by school staff without building ownership (AT, ML)	CO demonstrate interest in project success (AT, ML, STL, TV) and acknowledge T efforts (AT, STL) CO act to overcome problems (AT)
Plans overly ambitious (STL) Plans not followed by project leaders (STL) Purpose not clarified, mutually understood (TV)	Shared planning, purpose setting, decision-making (ML, TV) Networking encouraged (ML,TV) SA fit model to school priority (TV)
Ts perceive their efforts are devalued (ML)	Ts believe their opinions and efforts count (ML,TV) Ts believe project is designed for improvement (TV) Ts value recommendations of observers (TV) SA emphasizes professional development (TV)
Single energizer with low influence (AT) Conflicting messages (CO, SA, some MSDE) (ML, STL)	

AT=Active Teaching; ML=Mastery Learning; STL=Student Team Learning; TV=Teaching Variables.
CO=central office staff; SA=school administrators; T=teachers.

Impact was made on school administrators' knowledge for all models through training, and they improved instructional management (AT), strengthened their belief in traditional teaching (AT), and were more appreciative of teachers' capability (AT, ML) as implementation occurred in their schools.

Impact was made on central office staff's knowledge for all models through training, and, for AT, they improved instructional management as they became involved in implementation.

At the system level, there was knowledge gain (STL), cross-hierarchical sharing and commitment (AT, ML), and policies enacted to release teachers to train others or coordinate activities (ML), and to implement the model district-wide for a given subject or grade level (AT).

As stated earlier, the implementation strategy used influenced impact (with capacity-building being the least effective). Another strong influence was the relationship between a model and local priorities (as perceived by local educators). Probably the strongest influence on successful implementation was interactive support: while teachers can and do teach alone in their own classrooms, they do much better when their efforts and successes are acknowledged and they are part of a cross-hierarchical team working toward instructional improvement which benefits students.

VI. SUMMARY AND CONCLUSIONS

During the 1982-83 school year the Maryland State Department of Education continued to support local implementation of four research-based models of instructional improvement. Impact on educators at all hierarchical levels was assessed by various methods. Attention was paid to initiatives of MSDE (planning, training, and assistance) and to local implementation. The final sections of Chapters IV and V summarize state and local efforts respectively. Here, a brief overall summary is presented.

Application of the research on planned change facilitated implementation of models of instructional improvement. The SITIP design encouraged collaboration, increased communication using a common knowledge base about school and classroom effectiveness, and helped LEAs establish cross-hierarchical teams with the purpose of improving instruction. Unless the principles of planned change were applied, the model adopted had little chance of success.

The models themselves were perceived by local educators as having both subjective and objective value. Teachers' positive opinions had just as much influence as standardized test data in determining program maintenance or expansion. Teachers' negative opinions or concerns had a little influence in determining maintenance or expansion and did influence the relative impact of the project.

Active Teaching and Mastery Learning, when implemented with fidelity for a complete course, had a positive impact on student achievement, and helped teachers to organize instruction effectively. The models were valued more by teachers when used for structured academic curricula than for more open-ended subject areas. Mastery Learning required considerable administrative support. Both models were more successful when administrators acknowledged teachers' efforts.

Student Team Learning was popular with students and teachers and had a positive impact on achievement in some cases. However, it was not used consistently, and so cause-and-effect claims cannot be verified. Maintenance and expansion usually occured when teachers saw the value of the model, and appropriate materials were available.

Teaching Variables was used as a professional development process (and was then more likely to be valued by participants), or as part of a supervision process (and was then more likely to be viewed with suspicion by teachers). Little evidence was provided to indicate impact on student achievement, but there were some reports of teachers improving their management of instruction.

Key staff in all LEAs, in 11% of Maryland's schools, in colleges of education, and at MSDE increased their understanding of recent research on planned change and school and classroom effectiveness. Nearly 1000 teachers modified their instructional techniques, and most of them believe that the results are worthwhile. The general attitude of all role groups involved in SITIP was positive, with appreciation for the opportunities for professional growth, and for the benefits to students receiving improved instruction.

During the 1983-84 school year, local implementation will continue to be supported by MSDE, with attention to participant concerns and recommendations and to the results reported here. SITIP advocates hope that LEAs will make purposeful data-based decisions -- either to terminate or to institutionalize, preferably the latter with local commitment to build on the state initiative.

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